299 SECOND STREET

ENVIRONMENTAL IMPACT REPORT

DRAFT 07.31.15

DEPARTMENT OF CITY PLANNING 450 McALLISTER STREET · SAN FRANCISCO, CALIFORNIA 94102

299 SECOND STREET

DRAFT ENVIRONMENTAL IMPACT REPORT

83.311E

Publication Date: February 8, 1985
Public Comment Period: February 8, 1985 through April 1, 1985
Public Hearing Date: March 21, 1985

Written Comments should be sent to the Environmental Review Officer,
450 McAllister Street, Fifth Floor, San Francisco, CA 94102

DEPARTMENT OF CITY PLANNING 450 McALLISTER STREET · SAN FRANCISCO, CALIFORNIA 94102

February 8, 1985

TO: Distribution List for the 299 Second Street EIR

FROM: Alec S. Bash, Environmental Review Officer

SUBJECT: Request for the Final Environmental Impact Report for 299 Second Street

This is the draft of the Environmental Impact Report (EIR) for 299 Second Street. A public hearing will be held on the adequacy and accuracy of this document on March 21, 1985. After the public hearing, our office will prepare and publish a document titled "Summary of Comments and Responses," which will contain a summary of all relevant comments on this Draft EIR and our responses to those comments. It may also specify changes to this Draft EIR. Those who testify at the hearing on the draft will automatically receive a copy of the Comments and Responses document along with notice of the date reserved for certification (usually about 9 weeks after the hearing on the draft); others may receive such copies and notice on request or by visiting our office. This Draft EIR, together with the Summary of Comments and Responses document, will be considered by the City Planning Commission in an advertised public meeting and certified as a Final EIR if deemed adequate.

After certification, we will modify the Draft EIR as specified by the Comments and Responses document and print both documents in a single publication called the Final Environmental Impact Report. The Final EIR will add no new information to the combination of the two documents except to reproduce the certification resolution. It will simply provide the information in one rather than two documents. Therefore, if you receive a copy of the Comments and Responses document in addition to this copy of the Draft EIR, you will technically have a copy of the Final EIR.

We are aware that many people who receive the Draft EIR and Summary of Comments and Responses have no interest in receiving virtually the same information after the EIR

has been certified. To avoid expending money and paper needlessly, we would like to send copies of the Final EIR to private individuals only if they request them.

If you want a copy of the Final EIR, please so indicate in the space provided on the next page and mail the request to the Office of Environmental Review within two weeks after certification of the Final EIR. Any private party not requesting a Final EIR by that time will not be mailed a copy. Public agencies on the distribution list will automatically receive a copy of the Final EIR. Copies will also be avilable at the Department of City Planning, 450 McAllister Street - 5th floor, San Francisco, California 94102.

Thank you for your interest in this project.

REQUEST FOR FINAL ENVIRONMENTAL IMPACT REPORT

To: Department of City Planning, Office of Environmental Review

Re: 299 Second Street Final EIR (83.311E)

(____) Please send me a copy of the 299 Second Street Final EIR.

Signed: _____

Print Your Name and Address Below:

_____
(Name)

_____
(House Number and Street)

_____
(City, State and Zip Code)

If you are requesting an FEIR, please tear this page out, show your address above, fold the mailer so that your return address and the Department of City Planning's address is exposed, seal, add postage and mail.)

(fold here)

Return address:

_____

_____

_____

Place
postage
here

Department of City Planning
450 McAllister Street - 5th Floor
San Francisco, California 94102

ATTN: Mr. Paul Maltzer

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I. SUMMARY

A. PROJECT DESCRIPTION

The proposed office/retail complex is located on Assessor's Block 3736, Lots 27, 29 and 35 on the northeast corner of Second and Folsom Streets. The site is in a C-3-0 (SD) district, south of Clementina Street. The site is currently developed with two structures and two parking lots. Both structures would be demolished and replaced with the proposed project.

The project sponsor, 299 Second Street, proposes to construct a 16-story, 200-foot-tall office building, with ground level retail/restaurant space. The new building would contain an arcade on three of its sides, an outdoor seating area, ground-level retail/restaurant space, and offices, occupying a total floor area of 329,075 gross square feet (gsf). Office space would occupy 267,760 gsf and 15,580 gsf would be devoted to restaurant/retail uses. This represents a net increase of approximately 232,760 gsf of office space, 3,630 gsf of restaurant space, and 10,000 gsf of retail space on the site. The project would include 45,735 gsf of parking space (131 short-term independently accessible parking spaces) on two basement levels. Seven percent of the gross square feet total (7% x 329,075 = 23,035) would be allowed as accessory off-street parking and the remaining 22,740 gross square feet of parking would require Conditional Use authorization. The project includes 15,805 gsf of ground floor and open space uses. Both accessory off-street parking and groundfloor uses and open space would be excluded from FAR calculations resulting in a proposed Floor Area Ratio of 9.4:1. Transferable Development Rights would be included as part of the project. The project would include three full-size loading docks and two service vehicle spaces, thus conforming with Downtown Plan Interim Controls. Construction is expected to occur over an 18-month period beginning in June 1985 and ending in January 1987 (page 19).

B. ENVIRONMENTAL IMPACTS

1. Initial Study

An Initial Study was prepared for the 299 Second Street project to identify potential environmental issues resulting from the proposed project; these issues are covered in this EIR. Certain potential environmental issues were determined to be insignificant and are therefore not addressed in this EIR. These include: Light and Glare; Operational Noise; Project-Related Air Quality Impacts and Impacts from Odors/Burning of Materials; Utilities and Public Services (with the exception of Fire Protection Services); Geology/Topography; Water; Hazards; Cultural Resources and Biology. A copy of the Final Initial Study is attached to this report as Appendix A, page A-1.

2. Land Use and Zoning

The proposed project is within a 200-S height and bulk district and a C-3-0(SD) zoning district. The 200-foot-tall building would comply with height requirements of Interim Controls. The project would require Conditional Use authorization for exceptions to bulk requirements of the Interim Controls. The project would contribute cumulatively to new and proposed development in the project area (page 57).

3. Urban Design and Visual Quality

The proposed project would have an arcade wrapping around the building on Folsom, Second and Clementina Streets. The building would contain 16 floors, reaching a maximum height of 200 feet. The 50-foot-high base would be about the same height as the four-story building to the west, across the street from the site. The 16-story building would be similar to other highrises in the South of Market Street area either under review, approved or under construction. The degree of view blockage would vary considerably with changes in elevation and observer location with respect to the project. The office tower would be expected to most directly affect views of the downtown from office buildings south and southwest of the project site (page 74).

4. Shadow and Wind

a. Shadows

Project shadows would most affect the pedestrian environment between 10 a.m. and 3 p.m. through the year. At various times, shadows would be cast on portions of Second and

Clementina Streets. Many of the project's shadows would fall on areas shadowed by existing development or buildings under construction, and would thus not substantially increase shadowed areas. The project would not cast shadows on any public open space under the jurisdiction of, or open space proposed for acquisition by, the Recreation and Park Commission; therefore, the provisions of Proposition K, the Park Shadowing Initiative Ordinance, would be satisfied (page 75).

b. Wind

Wind tunnel results indicate that the project would not exceed comfort or hazard criteria levels (page 81).

c. Skyplane Studies

Two skyplane analyses were conducted, one on the west side of Second and one on the north side of Clementina Street opposite the site. Sunlight reduction would not occur at any time of the year at the Second Street location. At the Clementina Street location, morning sunlight would be eliminated before 11 a.m., and afternoon sunlight would not be affected (page 82).

5. Architectural and Historic Resources

The proposed project would require demolition of two buildings recently rated "C" by Heritage: 590 Folsom (Lot 27) and 299 Second Street (Lot 29) (page 85).

6. Transportation

The proposed project would generate about 6,185 net new daily person trips to and from the site, with about 514 outbound trips occurring during the p.m. peak hour. The p.m. peak-hour person trips would be segmented as follows: 146 vehicle-person trips, 100 Muni trips, 96 BART trips, 66 trips on other transit systems and 106 pedestrian or other mode trips.

Discounting the project's pedestrian trips, the project would increase the existing peak-hour travel (in and out of the downtown). Pedestrian flow regimes would remain the same on sidewalks and crosswalks adjacent to the project site with the exception of the Second

Street sidewalk and Folsom Street crosswalk which would degrade slightly from open to unimpeded.

The project would generate a net increased parking demand for about 95 spaces. The project's 131-space garage would increase on-site parking by about 57 spaces. Project generated transportation impacts would include 96 peak hour vehicles which would increase peak hour traffic volumes at Second/Howard by 4% and Second and Folsom by 4%. Regional auto traffic in the various corridors would increase by 0.1%. Transit peak hour ridership would increase between 0.1-0.4% of the totaldemand on individual transit carriers in the year 2000. The project provides 3 off-street freight loading spaces and 2 service/maintenance spaces.

7. Cumulative Air Quality

No violations of the state and federal eight-hour average carbon monoxide (CO) standards for vehicular emissions generated by the proposed project would occur at Howard and Second, Folsom and Second, and Folsom and First Streets. Regionally, impacts would be due to the vehicle miles traveled (VMT) associated with the project. The project itself would increase vehicular emissions by a small amount. This would not result in increased ozone concentrations in the Bay Area, but could lead to increases in ozone further downwind (page 116).

8. Noise

During the majority of construction activity, noise levels would be at or below existing traffic noise levels in the area.

Construction activities would be noisest during framing operations. Noise from impact wrenches would affect Second and Folsom Street office buildings as well as residences and warehouses in the immediate vicinity of Second and Folsom Streets. No audible increase in traffic noise would result from operation of the proposed project (page 146).

9. Energy

The total estimated annual energy use within the proposed project (based upon other City projects and Title 24 compliance) would be 51 billion Btus, or approximately 8,980 barrels of oil (page 126). The total estimated energy consumption for construction would be about 44 billion Btu or about 7,800 barrels of oil. Total transportation energy consumed by the project would be about 4.3 billion Btus, the equivalent of 800 barrels of oil (page 132).

10. Employment and Housing

At full operation, the project would provide 1,053 permanent jobs for office, retail and janitorial/service functions, resulting in a net new increase of 949 permanent jobs on the site. Approximately 4,050 jobs in the Bay Area would be indirectly created through the multiplier effect. Based on the City Planning Commission's Office Housing Production Program (OHPP) formula, the project would generate demand for 207 units (page 134).

11. Cumulative Fire Services

The proposed project would contribute to the cumulative demand for fire protection services in the downtown area. However, the increase in fire incidents from 1984 to 2000 would be less than 1% due to the effectiveness of the San Francisco and State Life Safety code provisions. The Fire Department anticipates that no new equipment or specialized staff would be needed to meet the demands identified for the C-3 District (page 152).

C. MITIGATION MEASURES

MITIGATION MEASURES INCLUDED AS PART OF PROJECT

- Notification to and coordination with the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board if evidence of significant cultural or historic artifacts are found during project excavation (page 155).

- Provision of secure bicycle storage facilities for commuters and short-term visitors relative to demand if demand for such facilities is greater than the number required by code (page 156).

- Placement of paving, landscaping or structures in the sidewalk area in such a way as to minimize interference with pedestrian traffic (page 156).

- Control of off-street parking spaces to assure priority for vanpool and carpool vehicles and vehicles driven by the physically handicapped (page 156).

- Coordination of project with construction contractors for any concurrent projects to minimize cumulative traffic impacts due to lane closures and street excavation (page 156).

- Specification in the construction contract that construction equipment would be muffled to not exceed City Noise Ordinance limits (page 157).

- Mechanical sweeping of adjacent streets by project contractor during excavation to prevent siltation of storm drains (page 159).

- Assessment of actual trip-generation patterns of project occupants and actual pick-up and drop-off areas for carpools and vanpools within a year of the project's full occupancy. This information would be made available to the Department of City Planning (page 156).

- Limiting construction truck movement to the hours between 9 a.m. and 4 p.m. during the construction period to minimize traffic conflicts (page 156).

- Satisfaction of OHPP requirement of 207 housing units (page 158).

MITIGATION MEASURE NOT INCLUDED IN THE PROJECT

- The project sponsor is considering various energy-saving devices (e.g. solar water heating, increased daylighting). Final decisions would be made on the basis of life cycle costing and compatibility with the overall design (page 158).

D. ALTERNATIVES

1. No Project

This alternative would involve no change to the project site as it now exists. No environmental impacts associated with the proposed project would occur. The project sponsor has rejected this alternative because none of the development objectives would be met (page 162).

2. Mixed-Use With Residential

The 345,500-gsf alternative would have the same exterior design as the proposed project except that it would not contain a greenhouse or an outdoor seating area.

It would contain 8,500 gsf of retail space, 200,000 gsf of office space, 77,000 gsf (154 units) of residences, and 60,000 gsf of parking on two basement levels, with a 10.2:1 FAR.

Visual, shadow, wind, architectural and historical, and noise impacts would be about the same as for the proposed project.

This alternative would generate 21% fewer new daily trips and 33% fewer new p.m. peak-hour outbound trips than the proposed project. Regional air quality impacts would be less than the proposed project; energy impacts would be greater. This alternative would have fewer employment impacts than the proposed project because of the decrease in office space. The sponsor rejected this alternative because a mixed-use residential project would not meet the objectives of providing a major retail and office mixed-use project on the site. Also, in the sponsor's opinion, this alternative would not be compatible in land use with adjacent existing and proposed buildings (page 163).

3. Mixed-Use Light Industrial

This alternative would contain an FAR of 6:1 and have a total floor area of about 185,160 gsf. The 12-story building would be 140 feet tall (60 feet shorter than the proposed project) and would contain 30,000 gsf of light industrial space and 155,160 gsf of offices. There would be 12,960 gsf of parking, or about seven percent of the total gross floor area.

Visual, shadow and wind impacts would be reduced proportionately as the building would be 60 feet shorter than the 200-foot proposed project. Elimination of retail/restaurant uses, addition of light industry and reduction in office space (by about 42%) would result in lower levels of employee-related impacts, traffic generation, parking and transit demand. This alternative would generate 65% fewer new daily trips and 55% fewer new p.m. peak-hour outbound trips than the proposed project.

The project sponsor rejected this alternative because it would not meet the development objectives of providing a mixed-use retail and office building and would preclude development of on-site retail and restaurant uses. In addition the sponsor rejected this alternative because office space lease rates have to be increased to support the light industrial uses, thereby reducing marketability of office space (page 165).

4. No Exceptions to the Downtown Plan

This alternative would consist of a 16-story 200-foot building that would respond to the Interim Controls to implement the Downtown Plan, and feature many of the bulk, setback, design and other building characteristics of the proposed project. No Transferable Development Rights would be used.

The base FAR for this alternative would be 6:1. Total gross floor area would be 195,340 gsf with 180,340 gsf of office space, 9,500 gsf of retail, 5,500 gsf of restaurant space and 12,974 gsf of parking (7% of total gross floor area).

Visual, shadow and wind impacts would be reduced proportionately as the upper portions of the building would be more slender (approximately 46% less gross floor area per floor in floors 4 through 15) than the proposed project. Architectural, historical and noise impacts would be the same as for the proposed project. Applying the OHPP formula for computing the housing requirement, this alternative would generate 120 housing credits, 87 fewer than the 207 calculated for the proposed project.

This alternative would generate 27% fewer new daily trips and 29% fewer new p.m. peak-hour outbound trips than the proposed project. The 91 peak-hour trips would increase nearby intersection traffic by about 2% and would not be measurable within typical daily

traffic fluctuations. This alternative would add about 0.1-0.3% to the total projected downtown Muni patronage levels; this increase would not be discernable by Muni patrons. With this alternative, peak-hour BART patronage would increase by about 0.1%, and load factors would not be measurably increased. This alternative's total parking demand would be about 122 spaces, 52 less than the proposed project.

Regional air quality impacts would be slightly less than for the proposed project; local air quality would be about the same. Energy consumption would be decreased. Employment-related impacts of this alternative would be less than for the proposed project, because the overall reduction in office gross floor area would provide fewer jobs.

This alternative was rejected by the project sponsor because it would not meet the objectives of maximizing the site's potential by developing a first-class mixed-use retail and office project through the use of Transferable Development Rights. In the sponsor's opinion, use of TDRs to allow additional office space would be the only economically feasible way to provide ground floor uses and other amenities that are typical of first-class mixed-use projects (page 166).

II. PROJECT DESCRIPTION

A. SPONSOR'S OBJECTIVES

The project sponsor, 299 Second Street, a California General Partnership, proposes to construct a 16-story, 200-foot tall, 329,075 gross square foot mixed-use office building. Its ground floor would be used as retail and restaurant space, with the restaurant space serving both the local office and pedestrian population. The project sponsor intends to develop an energy-efficient building that would conform to the provisions of the Downtown Plan, achieve a reasonable return on investment, and provide office, retail, restaurant and open space areas for workers in the project vicinity.

B. LOCATION OF THE PROJECT SITE

The project site is located on Assessor's Block 3736, Lots 27, 29 and 35. The site is in the South of Market area on the northeast corner of Second and Folsom Streets, south of Clementina Street (Figure 1, page 11). Under Downtown Plan interim controls adopted by the City Planning Commission on November 29, 1984 (Resolution No. 10166), the project is in a C-3-0 (SD) zoning district; has a permitted Floor Area Ratio (FAR) of 6:1; and is located in a 200-S height and bulk district. The maximum dimensions of an "S" bulk district allow full site coverage up to 100 feet in height (an amount equivalent to 1.25 times the width of the widest street adjacent to project site); between 100 and 160 feet in height, the maximum permitted building width is 160 feet and the maximum permitted diagonal dimension is 200 feet. Above 160 feet, the maximum permitted building width is 140 feet, and maximum average diagonal dimension is 160 feet.

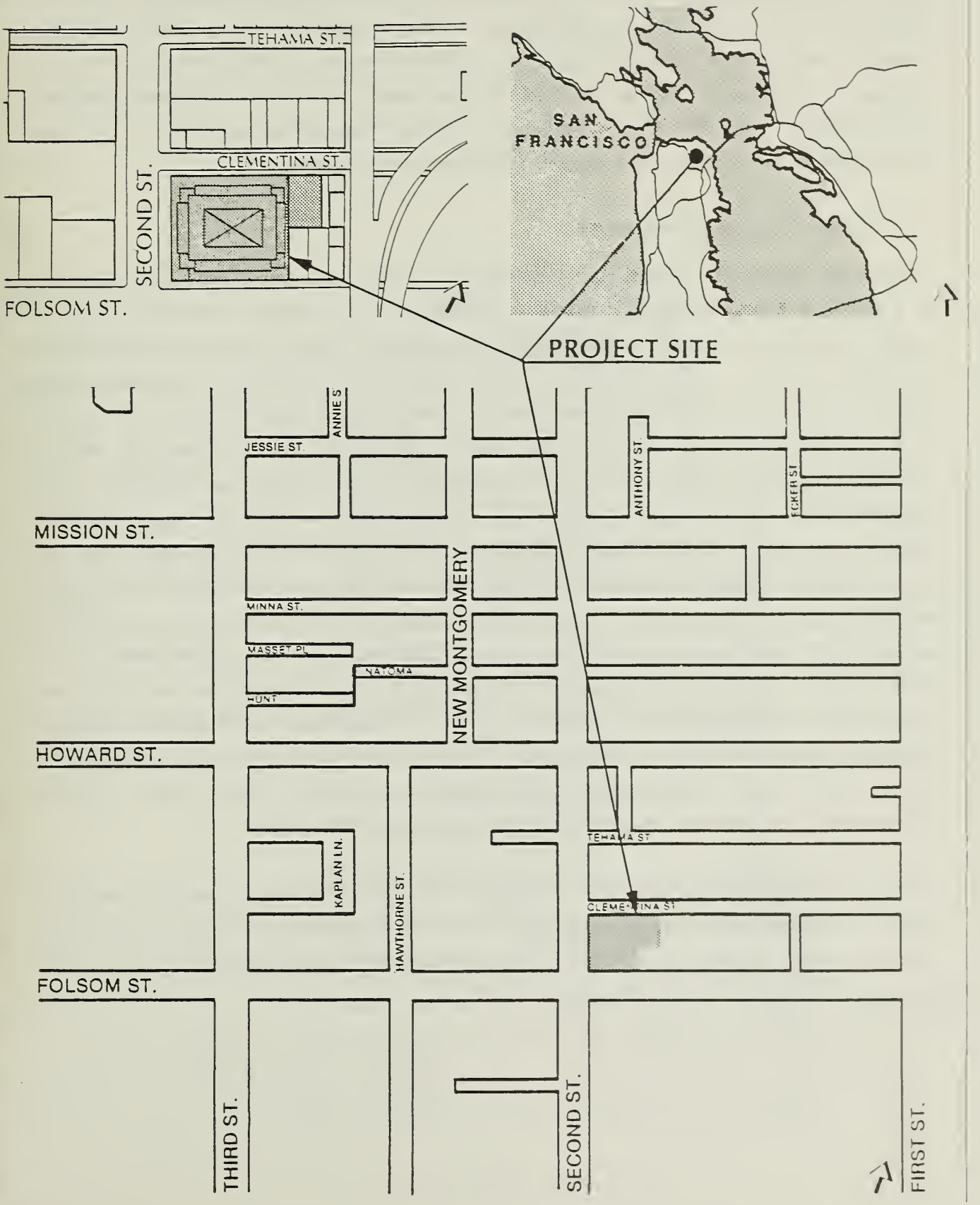
C. EXISTING ON-SITE USES

The project site includes three lots with a total area of about 30,890 square feet (see Figure 8, page 22). Lot 27 (590 Folsom Street) contains a three-story concrete office building. Lot 29 (299 Second Street) contains a two-story wood-frame building with offices above a ground-floor restaurant. Office uses in these two buildings total

SITE LOCATION MAP

FIGURE 1

SOURCE: EIP CORPORATION



approximately 35,000 gross square feet (gsf); restaurant uses total 1,950 gsf; no retail uses exist. There are also 52 long-term marked parking spaces on Lot 29, and 22 long-term spaces located partially on Lot 35 and partially on the northeastern portion of Lot 27 abutting Lot 35. Access to both parking lots is from Clementina Street. The three-story concrete building (590 Folsom), formerly the Bothin Realty Building, and the two-story building at 299 Second Street, have both been rated "C" by the Heritage expanded architectural survey.[1] There is no Department of City Planning rating for either building. Both buildings would be demolished prior to project construction.

D. PROJECT CHARACTERISTICS

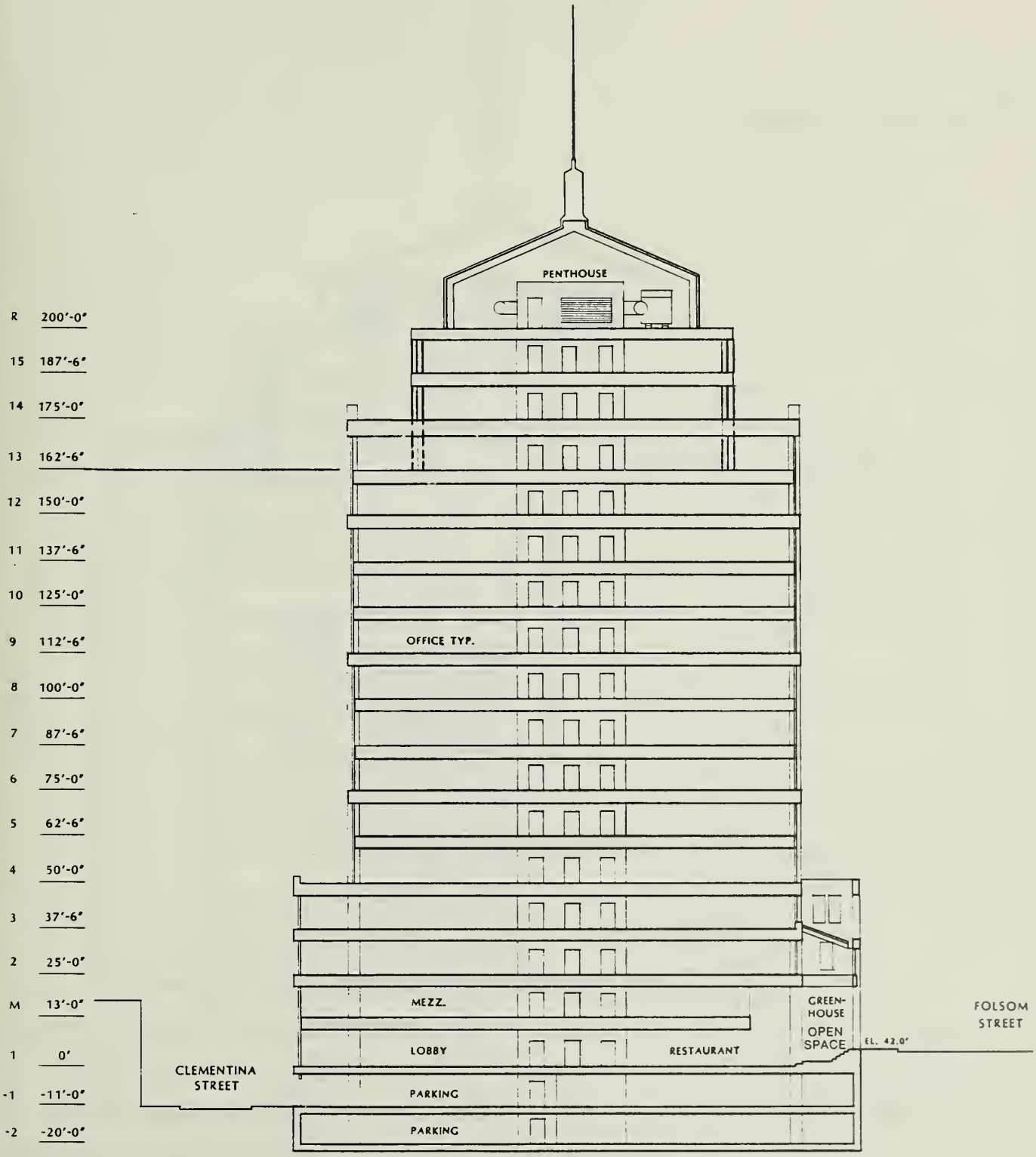
The project would entail demolition of the existing development followed by construction of a 16-story, 200-foot tall office/retail structure with a four-story (50-foot) base, a 9-story (112-foot) lower tower, a three-story (38-foot) upper tower, a mechanical penthouse level (28 feet) and a 53-foot high spire located on Lots 27, 29 and 35, Assessor's Block 3736. The project would contain two basement levels (45,735 gsf) of short-term parking with approximately 131 spaces, independently accessible from Clementina Street, representing a net increase of 57 parking spaces on the site. The new building, which includes office restaurant, and retail space, a greenhouse, outdoor seating, an arcade, lobby and mechanical space, would contain approximately 329,075 gsf, with about 267,760 gsf of office, 5,580 gsf of restaurant and 10,000 gsf of retail uses, 5,805 gsf of open space and 45,735 gsf of parking space. This represents a total of 3,630 gsf of net new restaurant space, 10,000 gsf of net new retail space, and 232,760 gsf of net new office space, with a FAR of 9.4:1. Transferable Development Rights would be used to increase the FAR above the 6:1 base FAR allowed for the project site. The main entrance to the building would be centrally located off Second Street, and a secondary entrance would be located off Clementina Street. Upper floors (3rd through 16th levels) would contain offices, terminating in a 17th-floor, peaked-roof mechanical penthouse level.

A greenhouse with seating would be accessible from Folsom Street at the site's southeast corner. Outdoor seating would be located at the site's southwest corner, at Second and Folsom Streets. Access to the building on the Second Street side features open space and landscaping Figures 2 through 7, pages 13 to 18).

SECOND STREET ELEVATION PLAN

FIGURE 2

SOURCE: KAPLAN/McLAUGHLIN/DIAZ

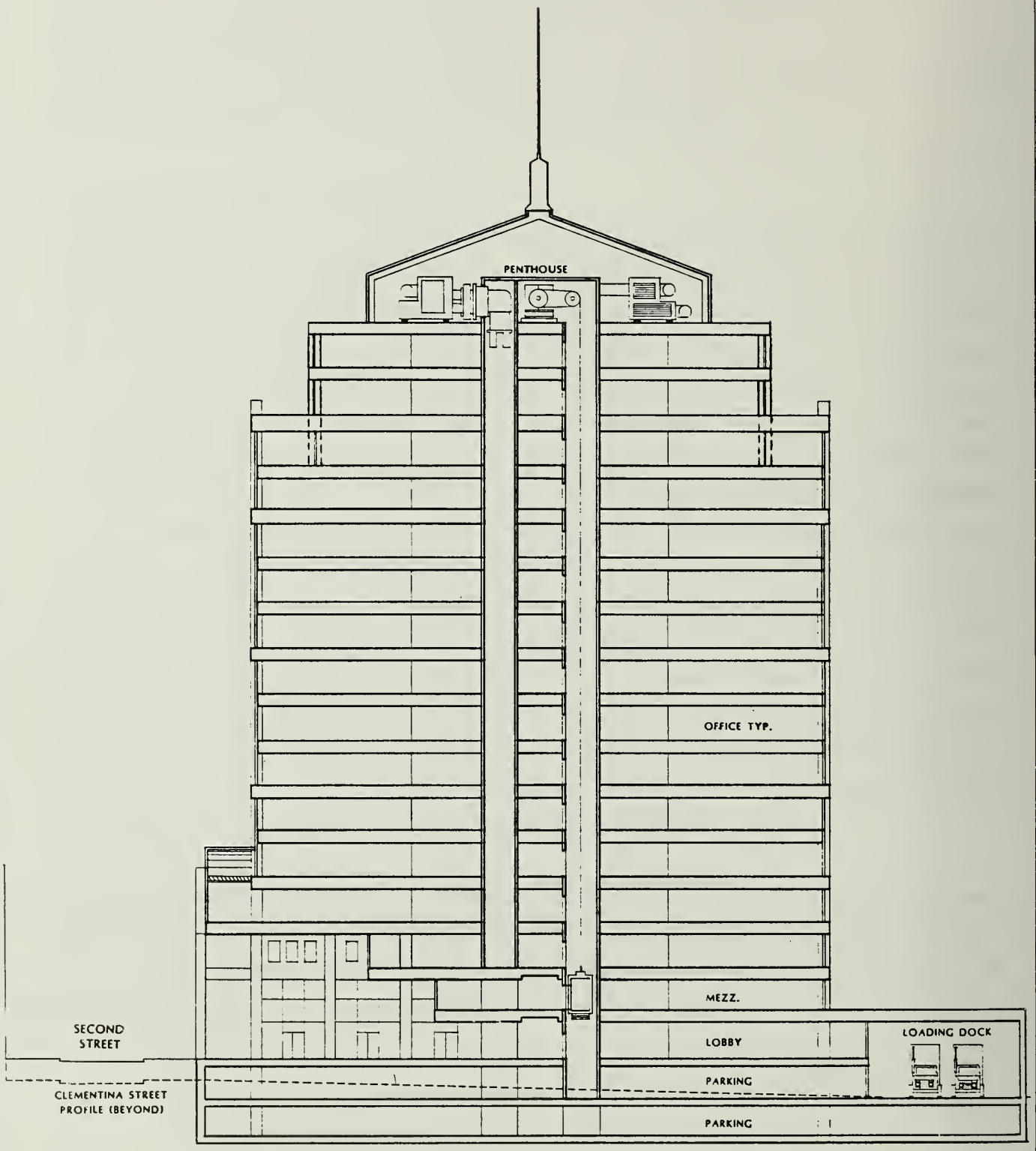


TRANSVERSE SECTION

FOLSOM STREET SECTION

FIGURE 3

SOURCE: KAPLAN/McLAUGHLIN/DIAZ

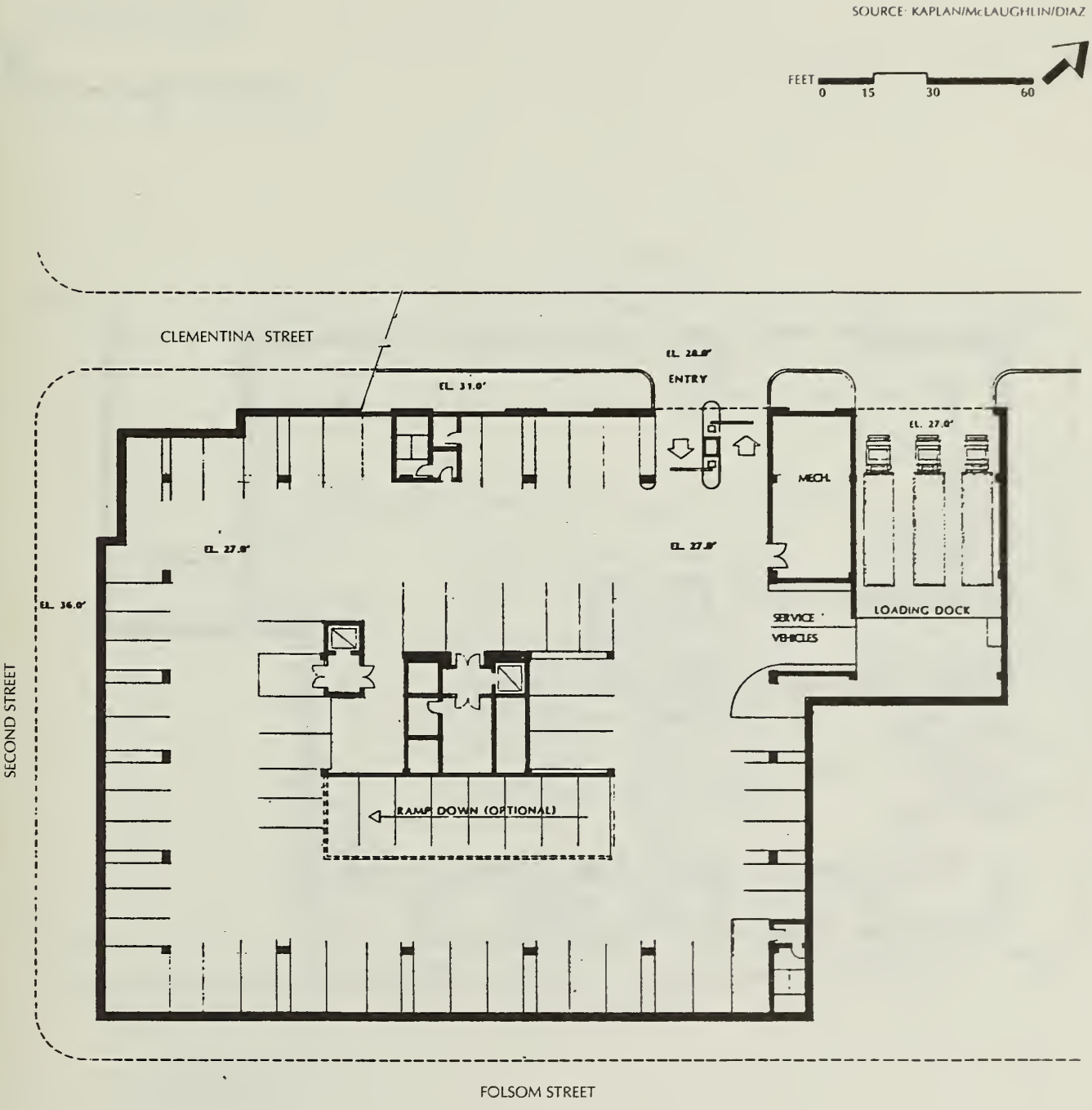


LONGITUDINAL SECTION

PARKING: LEVEL ONE

FIGURE 4

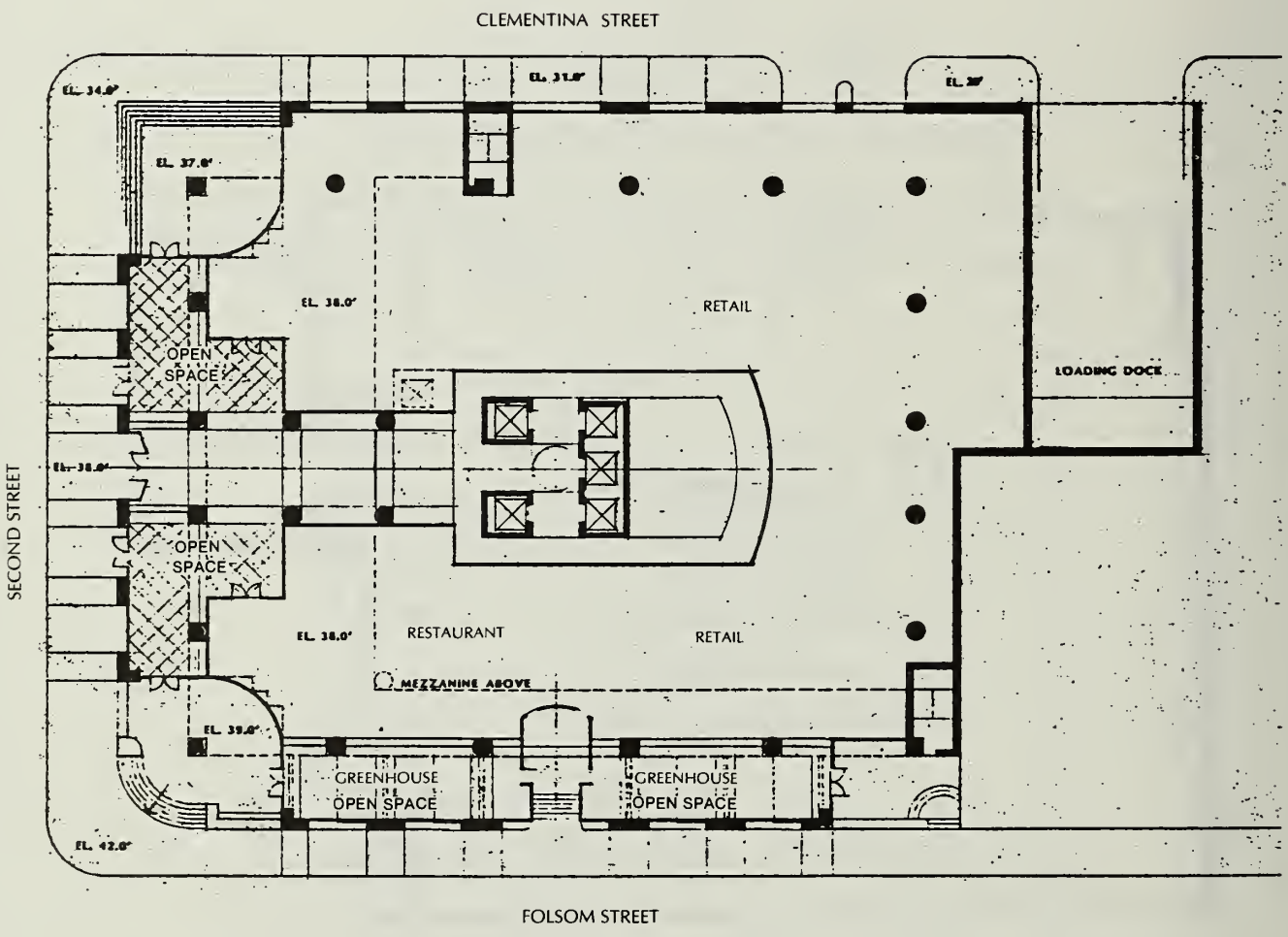
SOURCE: KAPLAN/McLAUGHLIN/DIAZ



GROUND FLOOR PLAN

FIGURE 5

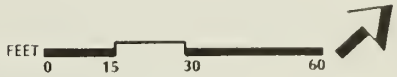
SOURCE: KAPLAN/McLAUGHLIN/DIAZ

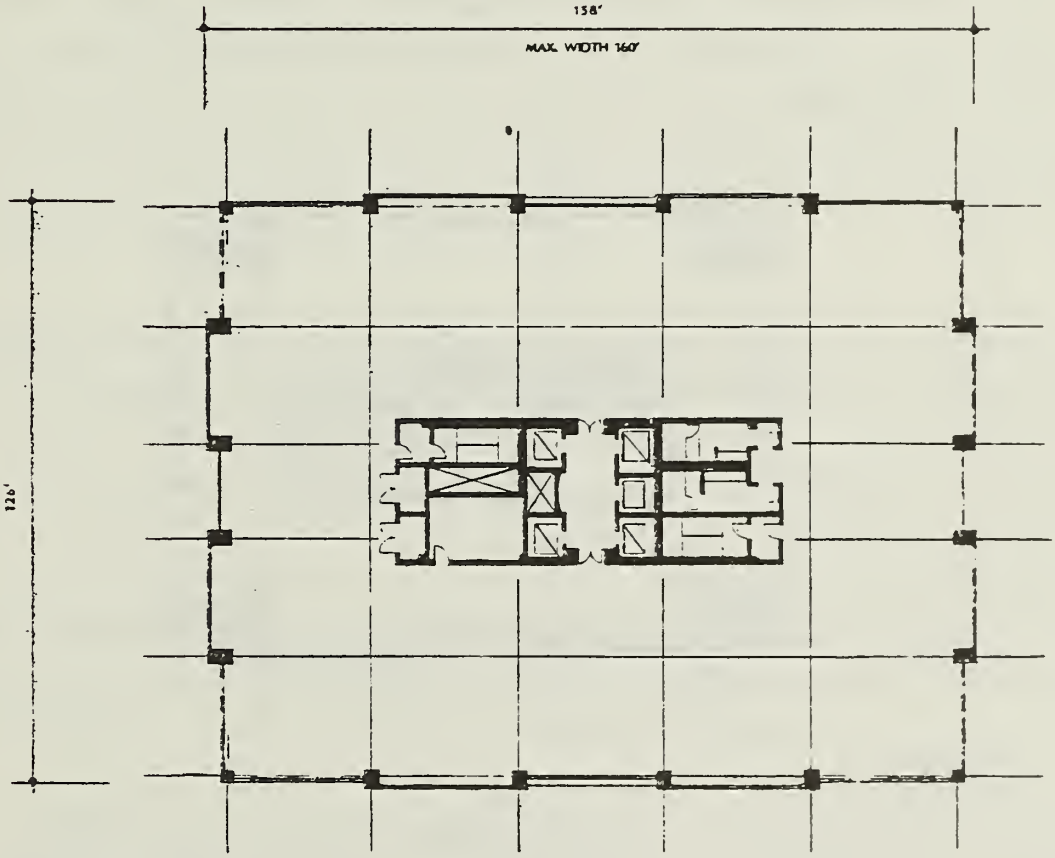


TYPICAL FLOOR PLAN

FIGURE 6

SOURCE: KAPLAN/McLAUGHLIN/DIAZ





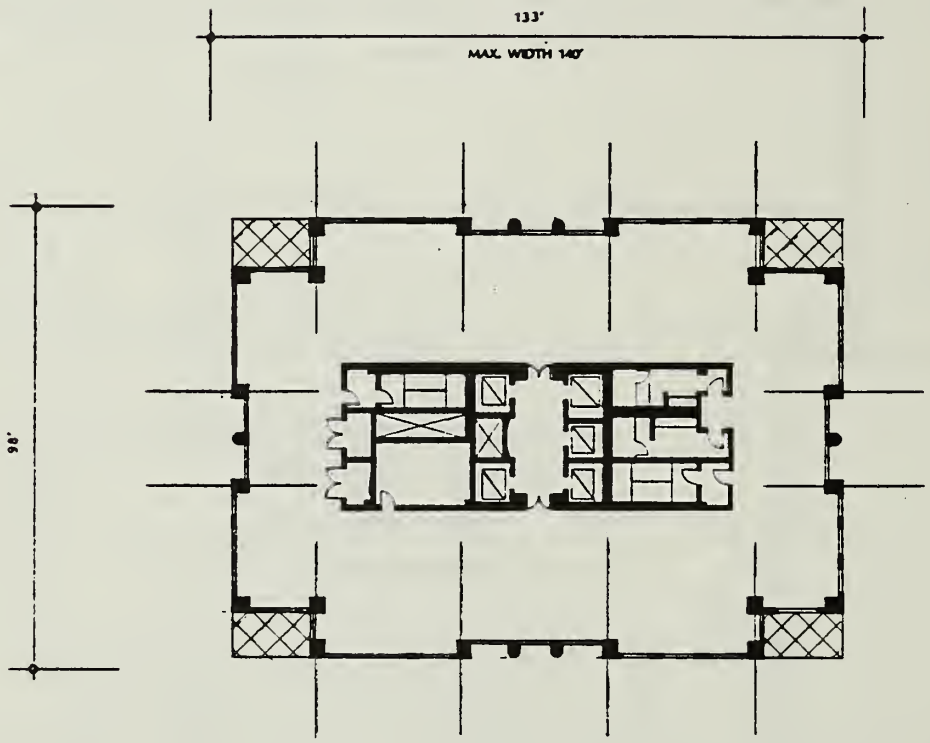
FLOORS 4 THROUGH 12
192' DIAGONAL
MAX. AVG. DIAGONAL 200'

TYPICAL UPPER TOWER PLAN

FIGURE 7

SOURCE: KAPLAN/McLAUGHLIN/DIAZ

FEET 0 15 30 60



140' DIAGONAL
MAX. AVG. DIAGONAL 160'

15TH FLOOR PLAN
10,657 S.F.

E. PROJECT SCHEDULE AND REQUIRED APPROVALS

The architectural firm for the proposed project is Kaplan McLaughlin & Diaz of San Francisco. The estimated construction cost of the project is $21,920,000. Construction is expected to occur over an 18-month period, beginning in June 1985 and ending in January 1987.

The first step in processing the proposed project is a public review of the Draft EIR (DEIR) and responses to comments received during the DEIR review period. If the City Planning Commission finds the document to be adequate, accurate and objective, it will certify the EIR. The proposed project would be subject to the policy of the City Planning Commission to review all downtown projects under the Commission's powers of discretionary review.[2] Evaluation criteria under this process include the protection and enhancement of the pedestrian envirionment, preservation of architecturally and historically significant buildings, adequate and appropriate means of transportation to and from the project site, energy conservation, physical relationship of the proposed building to its environs, and effect on the City skyline as viewed from public areas. Under discretionary review procedures, the City Planning Commission would review the building design and its envrionmental context, and approve, approve with conditions, or disapprove the site permit for the project.

The proposed project would also be subject to the policy of the City Planning Commission to review all downtown projects under Section 309 of the Interim Controls to implement the Downtown Plan.[3] The Interim Controls are intended to supercede the existing discretionary review powers of the Commission. However, discretionary review powers are still in effect. Thus, both Section 309 of the Interim Controls and existing review powers are technically in effect. Under the Interim Controls review procedures, the City Planning Commission would review the building design and its environmental context, and approve, approve with conditions, or disapprove the site permit for the project. Conditions could be imposed on aspects of the project affecting:

- Building siting, orientation, massing and facade treatment, including proportion, scale, setbacks, materials, cornice, parapet and fenestration treatment, and design of building tops.

- o Views and view corridors, shadowing of sidewalks and open spaces, openness of the street to the sky, ground level wind current, and maintenance of predominant streetwalls in the immediate vicinity.

- o Traffic circulation and transit operation and loading points.

- o Pedestrian activity, such as placement of entrances, street scale, visual richness, location of retail uses, and pedestrian circulation, and location and design of open space features.

- o Public spaces adjacent to the project, such as location and type of street trees and landscaping, sidewalk paving material, design and location of street furniture.

- o Aspects of the design of the project which have significant adverse environmental consequences.

- o Other aspects of the development for which modifications are justified because of its unique or unusual location, environment, topography or other circumstances.

A site permit application (No. 830-7557) was filed July 13, 1983, with the Central Permit Bureau of the City's Department of Public Works. The project sponsor would apply for a Conditional Use Authorization to exceed the permitted parking allowance of seven percent of the total gross floor area (7% x 329,075 = 23,035 gsf) of the development (Section 204.5(c) of the Planning Code) by 22,700 (45,735 - 23,035) gsf. The sponsor would also require an Exception to the setback requirements of Section 132.1 of the Interim Controls, as well as an Exception to the bulk requirements of Section 272 of the Interim Controls, both of which may be granted through the Section 309 review process.

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[1] Foundation for San Francisco's Architectural Heritage, San Francisco Downtown Architectural Survey: C-3 Zoning District Final Evaluated List, December 1, 1982 (an update of Splendid Survivors). Heritage is a non-profit volunteer historic preservation organization that has identified and documented significant San Francisco buildings.

[2] San Francisco Planning Commission, Resolution 8479, adopted January 17, 1980, applicable to all proposals in the C-3 districts.

[3] City and County of San Francisco, Planning Commission No. 10166, adopted November 29, 1984, imposing Downtown Plan Interim Controls; at Section 309 of the Controls.

III. ENVIRONMENTAL SETTING

A. LAND USE AND ZONING

1. Land Use

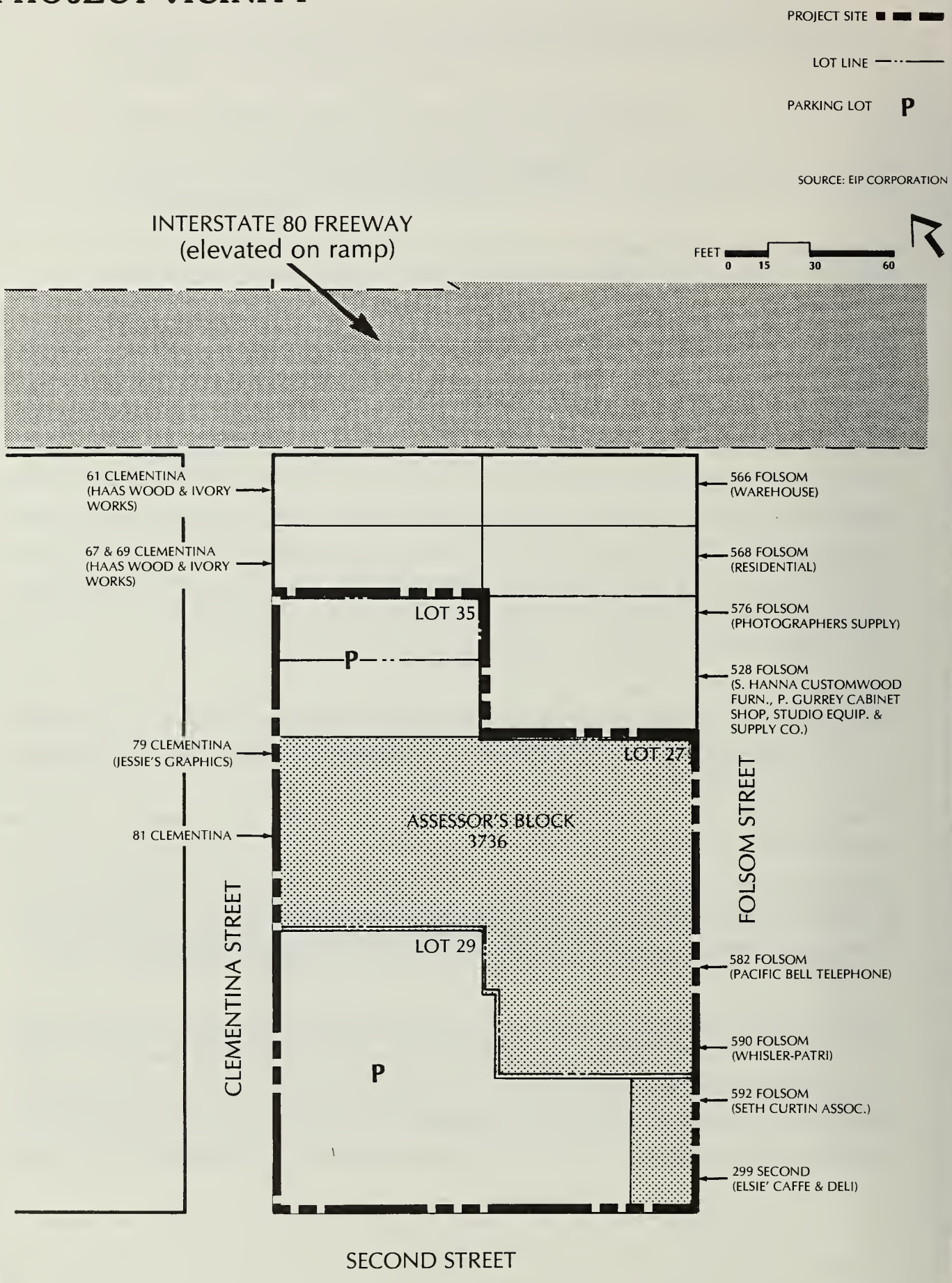
The project site consists of three lots (Lots 27, 29 and 35) on Assessor's Block 3736 with a total area of about 30,890 square feet. Lots 27 and 29 contain a three-story concrete office building (590 Folsom Street and 81 Clementina, in back) and a two-story wood-frame building (299 Second Street), with offices above a ground-floor restaurant. Office uses in the two buildings total approximately 35,000 gross square feet (gsf), and restaurant uses total 1,950 gsf. There are also 52 marked parking spaces on Lot 29, and 22 spaces located partially on Lot 35 and partially on the northeastern portion of Lot 27 abutting Lot 35. Access to both lots is from Clementina Street. All of the existing structures on Lots 27, 29 and 35 would be demolished. Locations of lots, addresses and existing businesses on the site are shown in Figure 8, page 22.

The project site is located on the periphery of the downtown business district in the South of Market area, about two blocks east of the Yerba Buena Center (YBC) Redevelopment Area, and approximately one block west of the proposed Rincon Hill Plan boundary. Adjacent land use is composed primarily of offices with parking facilities, wholesale/garage, and commercial home and business services. Six residential units are located northeast of the project site at 568 Folsom Street. Elevated freeway ramps curve around the project site to the east and south, forming a physical and visual barrier between the site and some surrounding land use activities (Figure 9, page 23).

The project area, once characterized by printing, wholesaling and light manufacturing uses, is now being transformed into an office and office support area. South of the site across Folsom Street is the Second and Folsom (Marathon) Project (EE 81.18) approved for construction. Southwest of the site across Second Street is the 18-story Pacific Bell equipment/office building. West and north of the project site are older structures which

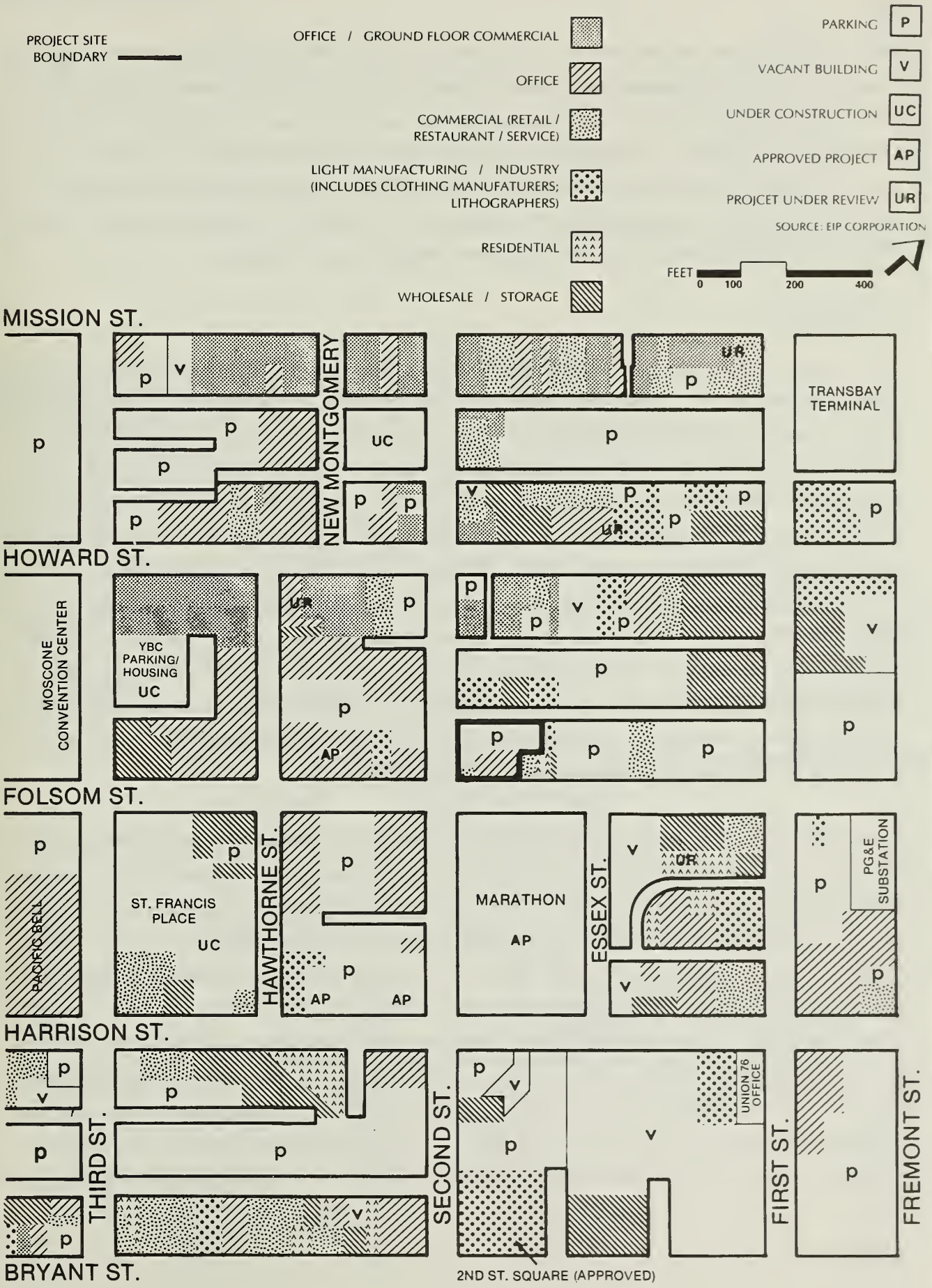
LAND USES IN IMMEDIATE PROJECT VICINITY

FIGURE 8



EXISTING LAND USE

FIGURE 9



have recently been converted to office uses and home and service businesses. Building heights in the area bounded by Howard, Bryant, First and Third Streets generally range from 1 to 18 stories, with newer buildings taller than older ones. The majority of existing buildings in this area are generally 2-4 stories. One block southeast of the site is the 600 Harrison Street project (EE 82.241), a six-story office building under formal review. One block southwest of the site is the St. Francis Place project, a mixed-use project (under construction) sponsored by the San Francisco Redevelopment Agency.

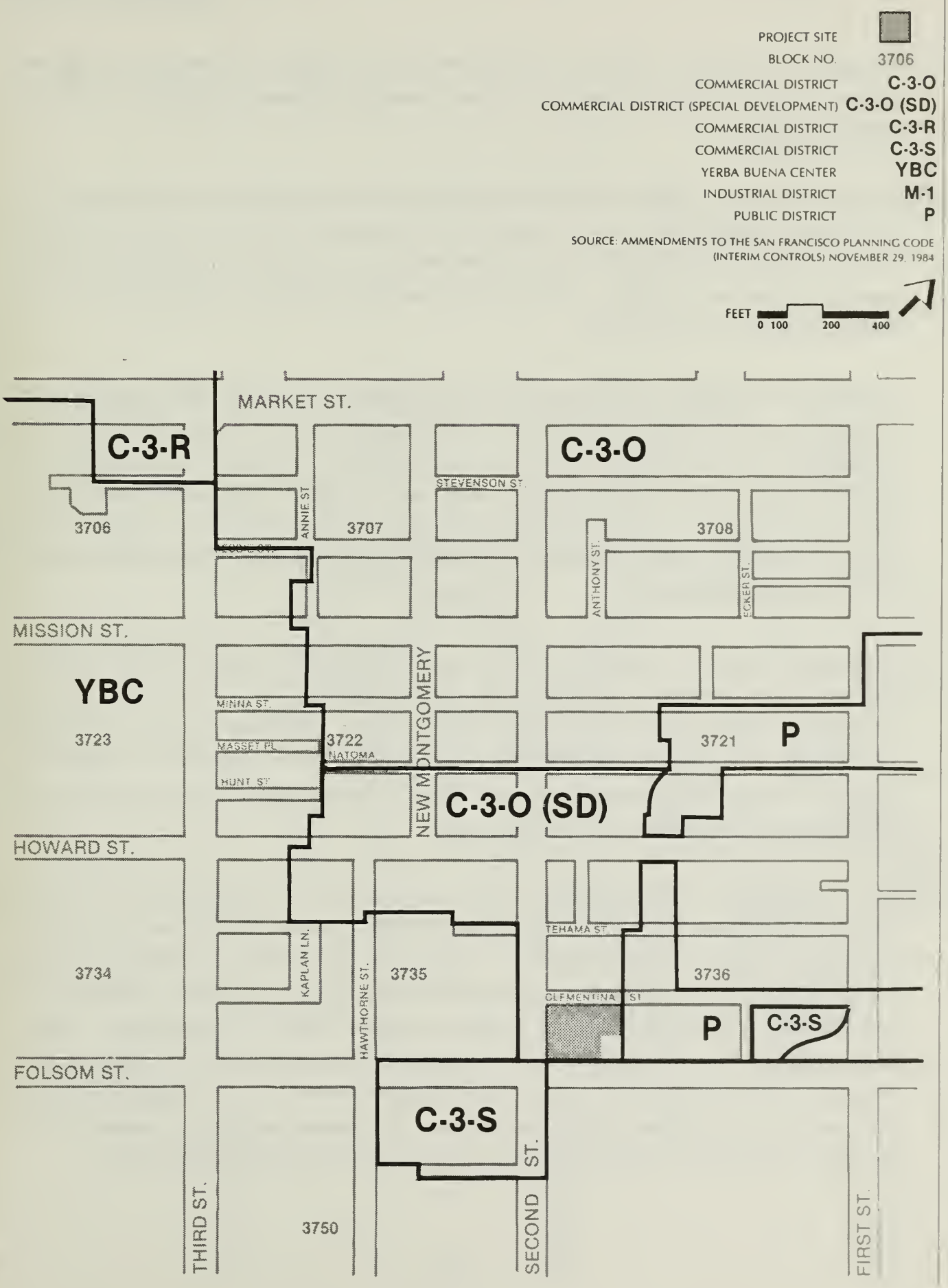
2. Zoning

The project site is in a C-3-0 (SD) (Downtown Office Special Development) district; an area designated as a receiver area for the transfer of development rights from architecturally significant buildings or from Conservation Districts. It is intended to serve as an extension of the downtown office district (Figure 10, page 25). Buildings in this district are subject to a basic FAR of 6:1.[1] Thus, buildings on the project site may contain a gross floor area of up to six times the project site area or about 185,340 square feet. Transferable Development Rights (TDRs) could be incorporated into projects in the C-3-0 (SD) district, pursuant to Section 128 of the Permanent Controls to implement the Downtown Plan (approved by the City Planning Commission, November 29, 1984), thus permitting projects with FARs above the base FAR of 6:1. Use of TDRs permits the transfer of development rights from one property to another, thus allowing development on one property to exceed Code-prescribed FARs, while the other property (often called a preservation or donor site) is frozen at a lower FAR.

The project site is within a 200-S height and bulk district. Maximum permitted height is 200 feet. Vertical extensions, such as spires which enhance visual appearance and are not used for human occupancy, are permitted under Section 260b(1)G of the Interim Controls, up to 75 feet above the height otherwise allowed. Section 260b(1)F of the Interim Controls permits exemption of the top 20 feet of mechanical penthouses where height limits are more than 65 feet. The maximum dimensions of an "S" bulk district allow full site coverage on the project site up to a building height equivalent to 1.25 x the width of the widest adjacent street. The widest street adjacent to the project site is Second Street, which measures 80 feet across. Hence, "S" bulk controls would allow full site coverage to a height of 100 (80 x 1.25) feet. Between 100 and 160 feet in height, the maximum permitted building length is 160 feet and the maximum permitted diagonal

ZONING DISTRICTS

FIGURE 10



dimension is 200 feet. Between 160 and 200 feet in height, the maximum permitted building length is 140 feet, and the maximum permitted diagonal dimension is 160 feet (Figure 11, page 27).

Pursuant to Section 161(c) of the Planning Code, off-street parking is not required in a C-3 district; however, up to seven percent of the total gross floor area of the structure is allowed as an accessory use (Section 204.5(c)) and can be excluded from FAR calculations pursuant to Section 102.8(b)7. There are 74 long-term spaces on the project site that would be displaced by the project.

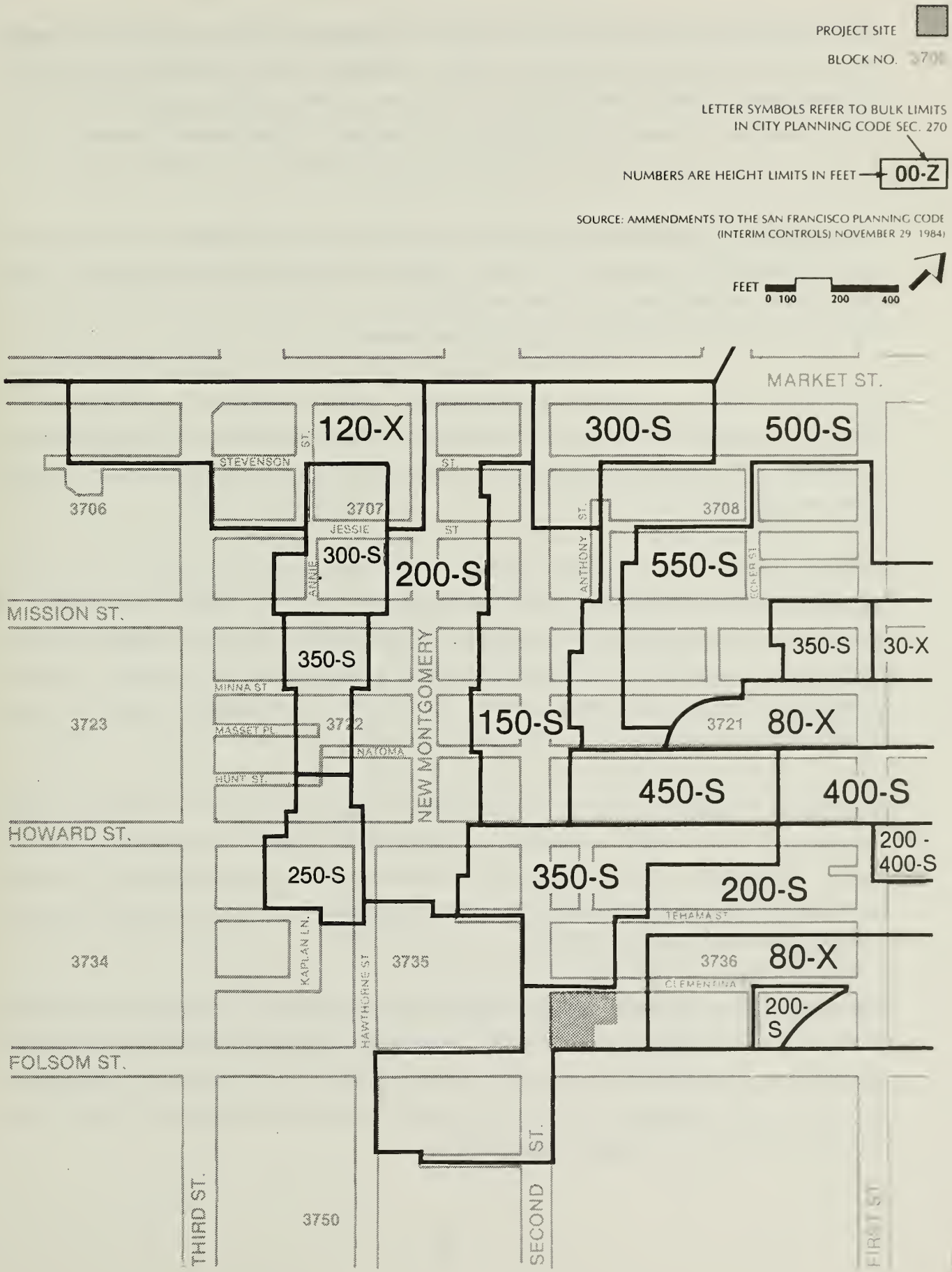
Parking area in excess of seven percent of the project gross floor area is considered a Conditional Use pursuant to Section 157 of the Planning Code, for which application must be made to the City Planning Commission. Specific criteria must be considered by the Commission in addition to those stated in other sections of the Planning Code, including a clear demonstration of the demand for additional parking beyond that considered as an accessory use, and a clear demonstration of the absence of potential detrimental effects of the additional parking.

Parking not classified as an accessory use in a C-3 district is also considered a major parking garage, according to Section 158 of the Planning Code. The City Planning Commission must review the garage using criteria reflecting concerns regarding accessibility, location, minimization of conflicts with pedestrian movements andamenities, the service patterns of other forms of transportation, and conformity with the Transportation Element of the Master Plan.

Section 303 of the Planning Code provides guidelines for the Conditional Use review process. As stated above, that portion of parking area in excess of seven percent of total project floor area would be considered a Conditional Use, would be considered a parking garage if located in a C-3 district, and would be subject to review criteria in Sections 157 and 158 of the Planning Code, in addition to those found in Section 303. Major considerations in the Section 303 review would include compatibility of a parking garage with the surrounding neighborhood, an assessment of whether or not a garage would be detrimental to the health, safety, convenience, or general welfare of persons in the vicinity, and conformity with the provisions of the Planning Code and Master Plan.

HEIGHT AND BULK DISTRICTS

FIGURE 11



Off-street loading requirements for the project site appear at Section 152.5 of the Interim Controls to implement the Downtown Plan. The project would require four off-street loading spaces. Section 153(a)6 of the Controls permits substitution of two service vehicle spaces for each required off-street freight loading space, provided that a minimum of 50% of the required number of spaces are provided for freight loading.

To encourage ground floor activity and amenities, Section 102.8(b)13 of the Interim Controls permits the exclusion of certain retail, restaurant, personal services, and related uses on the ground floor not to exceed 5,000 gsf per use, and not to exceed 75% of the area of the ground floor and ground-level open space.

A minimum amount of publicly accessible open space is required for projects in C-3 districts. Pursuant to Section 138 of the Interim Controls, a ratio of one square foot of open space to 50 gsf of project floor area is applied to a project to determine the open space requirement.

As a result of Proposition K, the Park Shadowing Initiative Ordinance, Interim Controls to implement the Downtown Plan, at Section 295, prohibit building permit authorization for any structure that would cast any shadow on properties under the jurisdiction of, or designated for acquisition by, the Recreation and Park Commission (subject to certain exceptions) unless it is first determined by the City Planning Commission that the impact of the shading is insignificant.

The project is located in the C-3-0 (SD) office special development district, an area designated for the orderly expansion of the financial district. Also, the C-3-0 (SD) district is intended to serve as an area in which to direct unused development potential from lots containing significant or certain contributory buildings through the use of Transferable Development Rights.[2]

New buildings or additions to existing buildings, shall be shaped, according to Section 148 of the Interim Controls, so that development will not cause ground level wind currents to exceed, more than 10% of the time year round, between 7 a.m. and 6 p.m., the comfort level of 11 mph equivalent wind speed in areas of substantial pedestrian use and 7 mph equivalent wind speed in public seating areas.

Pursuant to Section 149 of the Interim Controls, new buildings in a C-3 district shall feature works of art costing an amount equal to 1.5% of physical construction costs. Works of art shall be clearly visible from public sidewalks, and displayed and maintained for the enjoyment of the general public. The type and location of the artwork shall be approved according to Section 309 of the Interim Controls.

To minimize the transportation impacts of added office employment in the downtown, the project sponsor would be required to provide on-site transportation brokerage services for the actual lifetime of the project, pursuant to Section 163 of the Interim Controls, so as to facilitate the effective use of transit, evening ridesharing, and employ other practical means to reduce commute travel by single-occupant vehicles.

Section 270(d) of the Interim Controls provides guidelines for building bulk in the S Bulk District. The guidelines provide direction for assessing the bulk of the base, lower tower, and upper tower portions of a building. The base extends vertically to a streetwall height up to 1.25 times the width of the widest abutting street or 50 feet, whichever is more. There are no length or diagonal dimension limitations applicable to the base. The lower tower, above the base, has bulk controls of 160 feet for maximum length, maximum average floor area of 20,000 square feet, and a maximum average diagonal dimension of 200 feet. Upper tower bulk controls apply to buildings taller than 160 feet. The controls are: maximum length of 140 feet; maximum average floor area of 12,000 square feet; maximum floor size for any floor of 17,000 square feet; and a maximum average diagonal of 160 feet. Exceptions to these controls for architectural reasons are subject to review under Sections 141 and 272 of the Interim Controls and may be granted by the City Planning Commission pursuant to Section 309.

Section 132.1 of the Interim Controls provides guidelines for setbacks for buildings over 65 feet in height. Subsection 132.1(c) requires a minimum setback of 15 feet from the interior lot line for all structures in the "S" bulk district, including the proposed project. Subsection 132.1(c).3 allows for exception to the required interior lot line setback for structures which are adjacent to properties on which future development is unlikely due to restrictions.

3. Cumulative Downtown Office Development

Projects under review, approved or under construction as of March 10, 1984 include projects in the greater downtown area outside of the C-3 District (Appendix C, Tables C-1 and C-2, pages A-32 and A-42). An additional 5.5 million gsf of net new office space will be added when the buildings under construction are finished; another 4.8 million square feet of net new office space has been approved but is not yet under construction. Another 8.7 million square feet would be added if projects under formal review, as of March 10, 1984, are eventually built. This total of about 19.0 million gsf of net new office space (under formal review, approved, under construction, or completed but not fully occupied as of March 10, 1984) includes the 299 Second Street project, listed as adding about 171,000 gsf of net new office space. "Net" includes additional space, subtracting existing space on sites being developed or proposed for development.

Office space projections in the Downtown Plan EIR indicate the C-3 District would contain approximately 70.5 million gsf of office space by 1990, and 78.9 million gsf of office space by 2000.[3] Alternatives analyzed for the Downtown Plan EIR indicated a range of 77.5 million to 86.5 million square feet of total office space in the C-3 District by 2000.[4] Forecasts in the Downtown Plan EIR indicate a net increase of downtown office space of approximately 1.4 million square feet per year between 1984 and 1990 and a range of 0.7 to 1.6 million square feet per year between 1990 and 2000.

Within the 16-block area bounded by Market, Fremont, Harrison and Fourth Streets that includes the project site, there are 18 other developments either under review, approved, or under construction (Figure 12, page 31 and Table 1, page 32). Of the total 4,156,320 gsf of net new office space planned in this study area (not including approximately 10,000 gsf of office space in St. Francis Place, a project sponsored by the San Francisco Redevelopment Agency), 2,060,500 gsf has been approved or is under construction. The remaining 2,065,820 gsf is under formal review and subject to interim controls that limit permit approvals for office projects over 50,000 gsf in the downtown area until the adoption of comprehensive rezoning provisions.

CUMULATIVE DEVELOPMENT

FIGURE 12

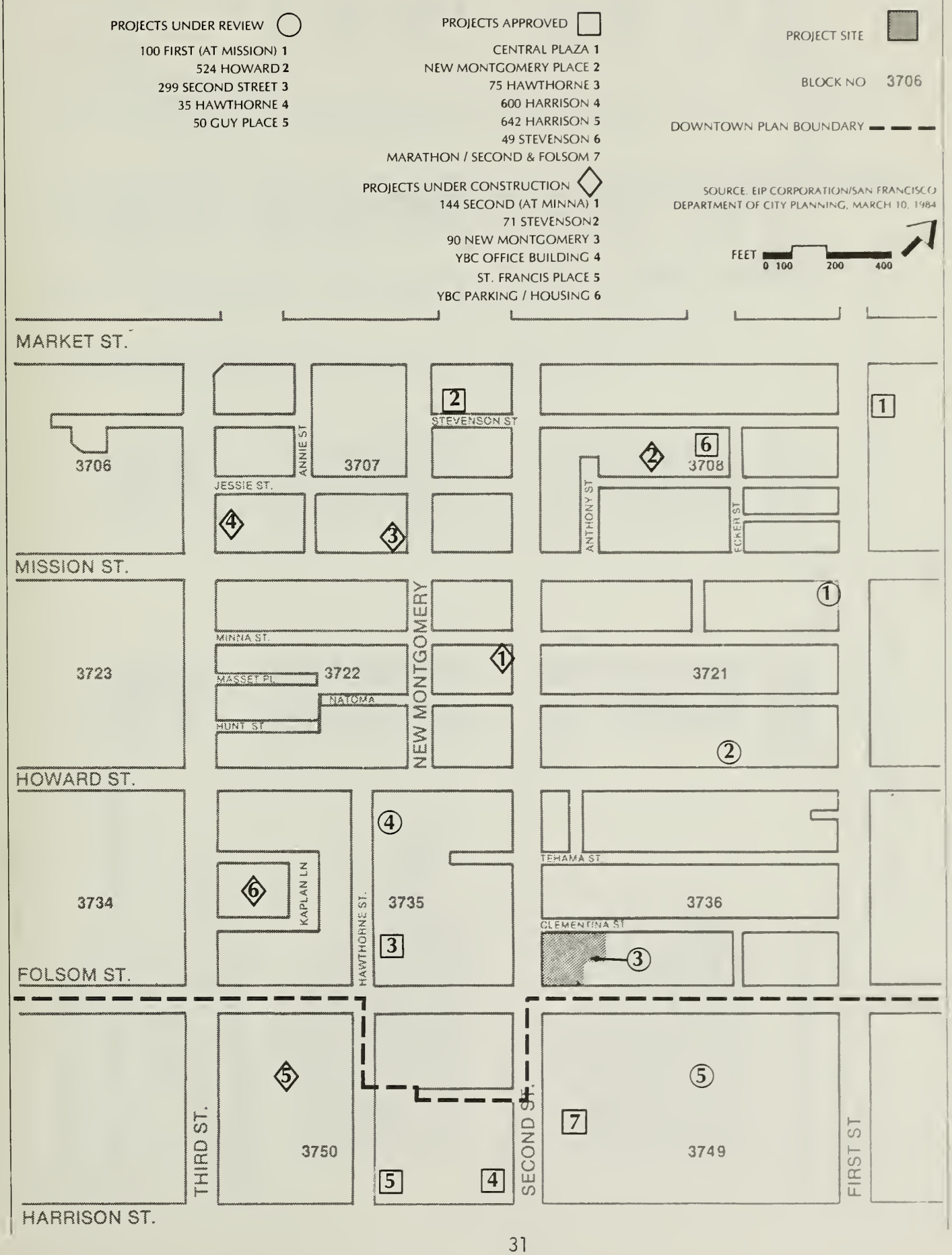


TABLE 1

CUMULATIVE OFFICE DEVELOPMENT IN THE PROJECT VICINITY[1,2]

Projects Under Review:	Office GSF		Retail GSF	
	Total New Construction	Net New Construction	Total New Construction	Net New Construction
49 Stevenson/83.57E	169,000	136,900	9,800	-2,900
Lincoln Plaza/81.297ED	405,000	265,000	10,000	10,000
YBC Office Building/SFRA	593,000	593,000	--	--
100 First @ Mission/83.331ED	348,920	342,000	--	--
524 Howard/83.40EZD	279,000	279,000	15,000	15,000
299 Second Street/83.311E	206,000	171,000	10,000	10,000
35 Hawthorne/83.313E	47,400	47,000	2,900	2,900
50 Guy Place/83.464EV	17,500	17,500	--	--
TOTAL	2,065,820	1,851,400	47,700	35,000
Projects Approved:				
Central Plaza/81.113ED	353,100	136,300	17,400	17,400
71 Stevenson/81.493ED	324,600	324,600	6,200	6,200
New Montgomery Place/81.245DA	227,500	209,700	2,200	-3,900
90 New Montgomery/81.492ED	124,300	124,300	3,350	3,350
75 Hawthorne/SFRA	61,900	61,900	--	--
Marathon/Second & Folsom/EE81.18	686,700	686,700	35,300	35,300
600 Harrison/82.241E	228,000	228,000	10,000	10,000
642 Harrison/82.77V	54,400	45,900	--	--
TOTAL	2,060,500	1,817,400	74,450	68,350
Projects Under Construction				
144 Second @ Minna/81.417ED	30,000	30,000	--	--
TOTAL	30,000	30,000	--	--
TOTAL PLANNED OFFICE DEVELOPMENT	4,156,320	3,698,800	122,150	103,350

[1] As of March 10, 1984.

[2] See Figure 12 for study area boundary

[1]City and County of San Francisco, Planning Commission Resolution No. 10166, adopted November 29, 1984, imposing Downtown Plan Interim Controls.

[2]City and County of San Francisco, Department of City Planning, Amendments to the Planning Code to Implement the Downtown Plan, (Interim Controls), adopted by City Planning Commission, November 29, 1984 at Section 248(a).

[3]City and County of San Francisco, Department of City Planning, Downtown Plan EIR, EE81.3, certified October 18, 1984, pages IV.B.28 and IV.B.31.

[4]Downtown Plan EIR, Appendices, pages G-37 through G-41.

B. URBAN DESIGN AND VISUAL QUALITY

Folsom Street is a four-lane, one-way eastbound street and Second Street is a four-lane two-way street by the project site. Both streets have parallel parking on both sides. They are heavily traveled, with sporadic lane blockages as trucks load and unload on Folsom Street. Folsom Street, looking east, terminates in the Transbay Bus Terminal overhead freeway ramp. To the south, the Embarcadero Freeway overpass curves southwest, paralleling Harrison Street. There is no visual sense of beginning or end to the ramps as they curve around the project area to the east and south. The ramps rise above most of the buildings in the area and impart a sense of enclosure to the project area. The City skyline of high-rise office buildings forms the backdrop to the project site looking north (Figure 13, page 35).

Building heights in the immediate area vary from 1 to 18 stories (Figure 14, page 36). The older buildings are low-rise brick, concrete, or wood-frame buildings in various states of repair. These and newer structures are built out to the property lines and contain offices and light industrial uses in a variety of styles, colors, and sizes, ranging from two-story Victorian to modern smooth-skinned highrises.

Street trees of varying species, heights and ages are evenly spaced or grow in small, linear clusters along some blocks of Second and Folsom Streets and one area on Clementina Street, north of the project site. The streetscape along Second and Clementina Streets is broken up by overhead utility lines and poles, and light standards.

The Second and Folsom Street intersection offers a visual sampling of the transition occurring within the project area. The southeast corner is currently a construction site with a chain link fence around the perimeter, containing construction equipment and a portable on-site construction office. Across Second Street, on the southwest corner, is the newer 18-story, 210-foot-high Pacific Telephone building set back with a plaza on Folsom Street. The architecture is modern with a flat, windowless facade of grey concrete with no ornamentation or detail. On the northwest corner of the intersection is a renovated four-story Victorian wood-frame rust and beige office building with a prominent cornice line and window pattern. The three-part composition contains a one-level base, a two-story mid-section, and a one-story upper level.

PROJECT AREA PHOTOGRAPHS

FIGURE 13

SOURCE: EIP CORPORATION

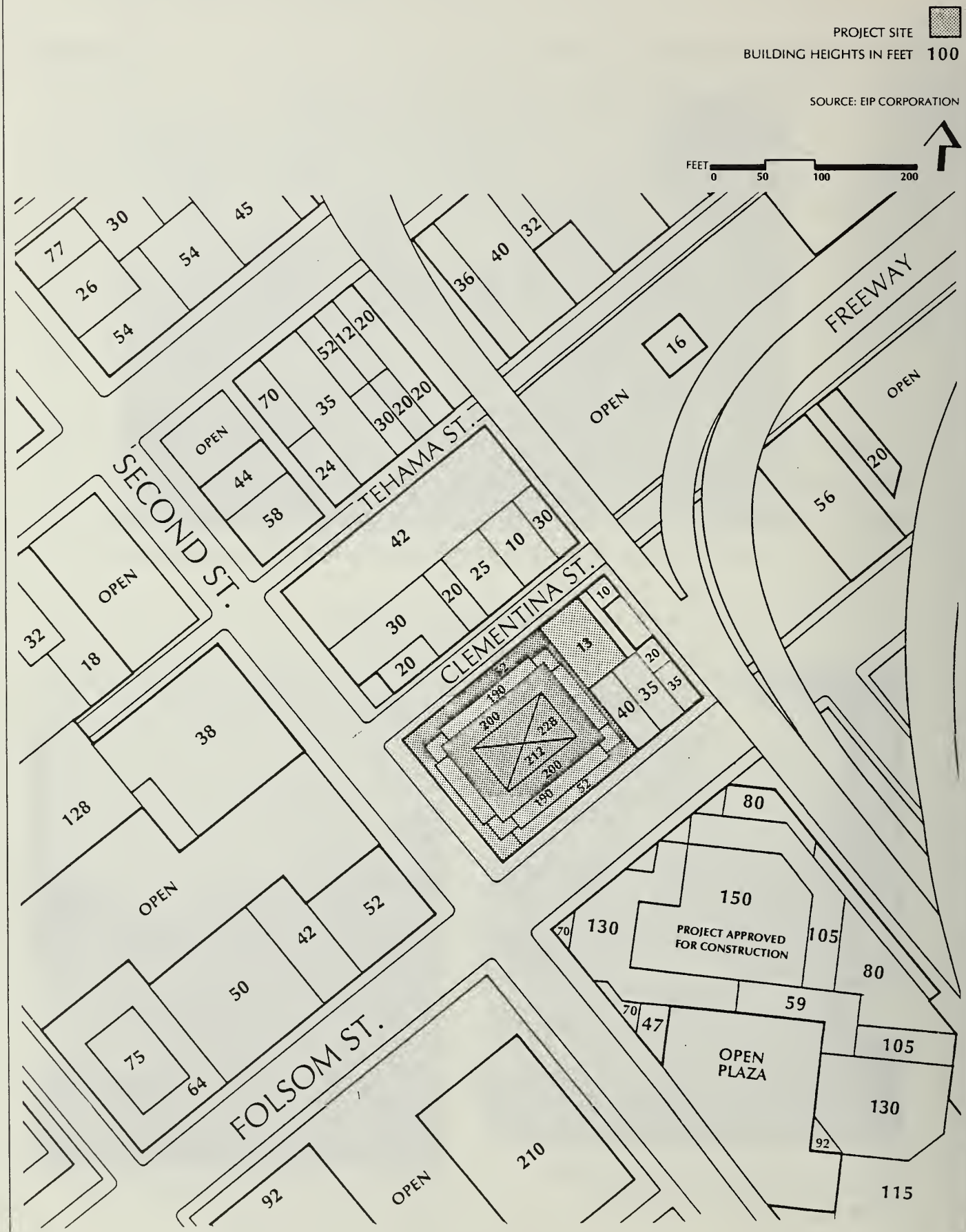
VIEW LOOKING NORTH TO PROJECT SITE ON SECOND STREET

ELSIE'S CAFFE (299 SECOND STREET) LOOKING NORTHEAST FROM FOLSOM STREET

VIEW SOUTHEAST OF PROJECT SITE FROM SECOND STREET

BUILDING HEIGHTS IN THE IMMEDIATE PROJECT AREA

FIGURE 14



The project site is occupied by two buildings. One is a three-story, grey, concrete, renovated L-shaped warehouse with beige and green trim. The north facade of the building has multiple-paned horizontal windows fronting on but set back from Clementina Street. The other building is a two-story Victorian wood-frame structure on the corner, with bay windows on the upper level. The remainder of the site is a striped, asphalt parking lot, separated by a wing of the three-story building.

C. SHADOW AND WIND

1. Shadow

Existing structures on the site cast shadows on streets and sidewalks in the project vicinity. Shadows from the two existing buildings are cast onto portions of Clementina and Second Streets at different times of the day in certain seasons of the year. Existing and project shadow patterns for various times of the day and year are discussed in detail in Section IV.D. Environmental Impacts, pages 75 through 82, and are shown in Figures 21 through 25, pages 76 through 80.

On June 5, 1984, Proposition K, the Park Shadowing Initiative Ordinance, was passed by the voters in San Francisco. Generally, Proposition K prohibits issuance of a building permit for structures that will cast any shade or shadow during designated hours upon property under the jurisdiction of, or designated for acquisition by, the Recreation and Park Commission unless the City Planning Commission first holds a hearing and determines that any adverse impact on the use of the property because of the shading or shadowing would be in-significant. The Planning Commission would not make a determination of significance until the Recreation and Park Commission reviewed and commented on the project.

The closest property under the jurisdiction of the Recreation and Park Commission is South Park, located approximately three blocks southeast of the project site, near the intersection of Second and Bryant Streets.

2. Wind

San Francisco's climate is dominated by sea breezes characteristic of marine climates; there are few extremes of heat and cold. The warmest month is September, with an average daily maximum of 69 degrees; the coldest is January, with an average daily maximum of 56 degrees. The prevailing wind direction in San Francisco is westerly; southwesterly and northwesterly winds are also frequent.

Wind conditions in San Francisco partially determine pedestrian comfort on sidewalks and in other public areas. In downtown areas, flat-walled, high-rise buildings can funnel wind

into narrower areas, increase windspeed and turbulence, and divert winds downward to street level.

U.S. Weather Bureau and Bay Area Air Quality Management District (BAAQMD) data show that westerly (i.e., from the west), southwesterly, and northwesterly winds are the most frequent and strongest winds during all seasons in San Francisco.[1] On an aggregate basis, west winds blow approximately 52% of the time. West winds are also the strongest, averaging about 7 miles per hour (mph), exceeding 12 mph 6% of the time.

Southwesterly winds are typically the second most frequent (about 14% of the time) and second strongest winds, averaging 7 mph and exceeding 12 mph about 2% of the time. Northwesterly winds have had the second highest average speed during some years, though they generally occur 6-8% of the time, average 5 mph, and rarely exceed 12 mph.

Average windspeeds are highest during summer and lowest during winter months. However, the strongest peak winds occur during the winter, when average speeds of 27 mph or more for one hour have been recorded. The highest average windspeeds are in the midafternoon; the lowest are in the early morning. Peak windspeeds are distributed evenly throughout the day.

Wind tunnel tests (see Appendix, page A-55) conducted for the project site indicated that existing windspeeds along streets near the site average from 1.8 to 7.3 miles per hour on summer afternoons (the windiest time of the year on the average). The highest average windspeeds were found along Second and Folsom Streets. At no point was the average windspeed found to exceed the comfort criterion of 11 mph or the hazard criterion of 35 mph.

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[1]The U.S. Weather Bureau data was collected from 1891 to 1930 at 465 California Street, near Montgomery Street, about.50 miles northwest of the project site. The Bay Area Air Quality Management District data was collected in the mid-1970s at 939 Ellis Street, near Van Ness Avenue, about 1.5 miles west of the project site. (The BAAQMD station is not at 900 23rd Street.)

D. ARCHITECTURAL AND HISTORIC RESOURCES

1. Buildings on the Project Site

The two buildings on the project site are rated "C"[1] by Heritage in its most recent architectural survey of December 1, 1982. The rating scale is from "A" (Highest Importance) to "D" (Minor or No Importance). The 590 Folsom Building (on Lot 27), formerly the Bothin Realty Building, built in 1921 by Arthur G. Bugbee, is a three-story concrete structure. The 299 Second Street building (on Lot 29), a two-story wood-frame structure, was built around 1906. None of the buildings on the site is included in the list of architecturally or historically significant buildings adopted by City Planning Resolution 8600.

2. Significant Buildings in the Vicinity

In the vicinity of the proposed project bounded by First, Third, Folsom and Market Streets, there are several buildings rated "A" and "B" by Heritage and also rated by the Department of City Planning (DCP) (Figure 15, page 41).

Development in the downtown area has resulted in the total or partial demolition of 37 rated buildings between 1979 and 1982. See Appendix H, page A-63 for a complete list of these buildings.

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[1] Charles Hall Page and Associates, for the Foundation for San Francisco's Architectural Heritage, Splendid Survivors (San Francisco: California Living Books, 1979), pages 12-13. A "C" (Contextual Importance) rating indicates that a building is distinguished by its scale, materials, compositional treatment, cornice and other features. The building was rated in Heritage's updated survey, December 1, 1982.

ARCHITECTURALLY/HISTORICALLY SIGNIFICANT BUILDINGS IN THE PROJECT AREA

FIGURE 15

	BLDG. NO.	LOT NO.
CARROL & TILTON BLDG. 73S MARKET	1	61
BANCROFT BLDG. 72S MARKET	2	62
CENTRAL TOWER 703 MARKET	3	1
EXAMINER BLDG. 691 MARKET	4	S7
MONADNOCK BLDG. 681 MARKET	5	51
PALACE HOTEL 639 MARKET	6	52
METROPOLITAN TRUST 625 MARKET	7	59
HOFFMAN GRILL 619 MARKET	8	SS
SANTA FE BLDG. 601 MARKET	9	1
SCHUMACHER BLDG. 20 SECOND ST.	10	2
MERCANTILE BLDG. 700 MISSION	11	71
BREEN'S 71-77 THIRD ST.	12	29
CALL BLDG. 74 NEW MONTGOMERY	13	33
SHARON BLDG. 55 NEW MONTGOMERY	14	35
PALACE GARAGE 111 STEVENSON	15	44
WELLS FARGO 71 SECOND ST.	16	19
CALIFORNIA FARMER 83 STEVENSON	17	34
64 JESSIE	18	29
CHANCERY BLDG. S62 MISSION	19	17
ONE ECKER 16 JESSIE	20	22

	BLDG. NO.	LOT NO.
WILLIAMS BLDG. 101 THIRD ST.	21	63
RIALTO BLDG. 116 NEW MONTGOMERY	22	71
RAPP BLDG. 121 SECOND	23	71
S49 MISSION	24	81
PACIFIC TELEPHONE 140 NEW MONTGOMERY	25	8
N. CLARK & SONS (PKG) 116 NATOMA	26	6
MORTON L. COOK BLDG. 132 SECOND	27	3
BARKER KNICKERBOCKER 141 SECOND	28	50
UNDERWRITER'S 147 NATOMA	29	13
ELECTRICAL BLDG. 165 SECOND	30	25
F.C JANSSEN BLDG. S68 HOWARD	31	20
CA. BOILER WKS./GAR. S22-528 HOWARD	32	13
PRINTING ARTS 500 HOWARD	33	11
SHARON ESTATE CO. 667 HOWARD	34	39
S.F. NEWS CO. 6S7 HOWARD	35	41
BRIZARD & YOUNG 72 TEHAMA	36	91
PHILLIPS BLDG. 234 FIRST	37	6
J.E. BIER BLDG. 572 FOLSOM	38	25
GEORGE W. CASWELL CO. S30 FOLSOM	39	17

PROJECT SITE

BLOCK NO. 3706

HERITAGE RATING "A" ☆

HERITAGE RATING "B" ★

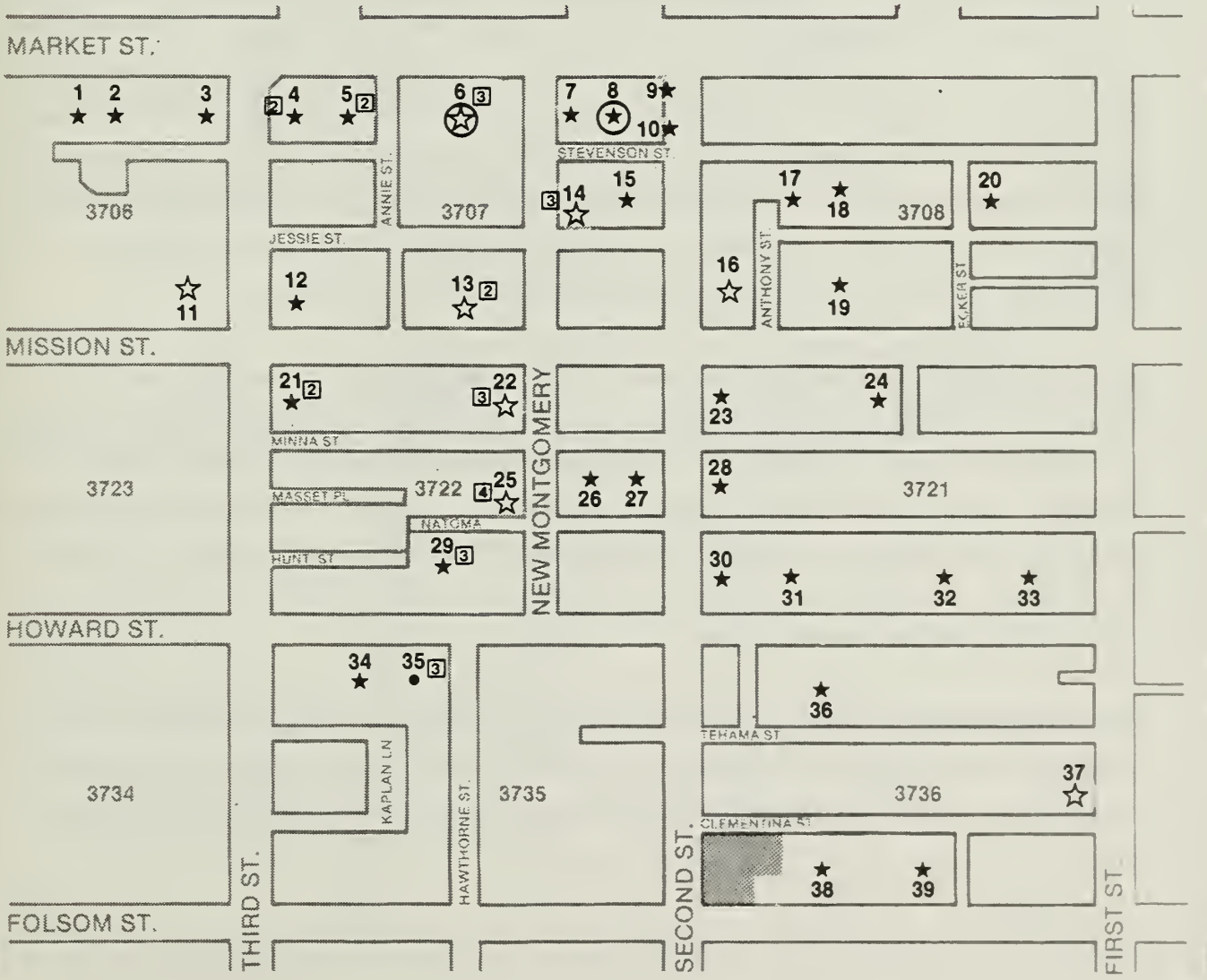
HERITAGE RATING "C" •

CITY LANDMARK ○

DCP RATING [3]

SOURCE: ROGER OWEN BOYER AND ASSOCIATES/ EIP CORPORATION

FEET 0 100 200 400



E. TRANSPORTATION

The project site is bounded on the south, west and north by Folsom, Second and Clementina Streets, respectively. In the project area, Second Street is a four-lane, two-way street, while Folsom Street is one way (eastbound) and four lanes wide. Clementina is a relatively narrow (24-foot curb-to-curb width) street serving local access needs and service vehicles. Folsom Street is designated a primary vehicular street, transit preferential street, and preferred commute bicycle route. Second Street is a pedestrian oriented, transit preferential and preferred commuter bicycle street in the Transportation element of the City's Comprehensive Plan.[1]

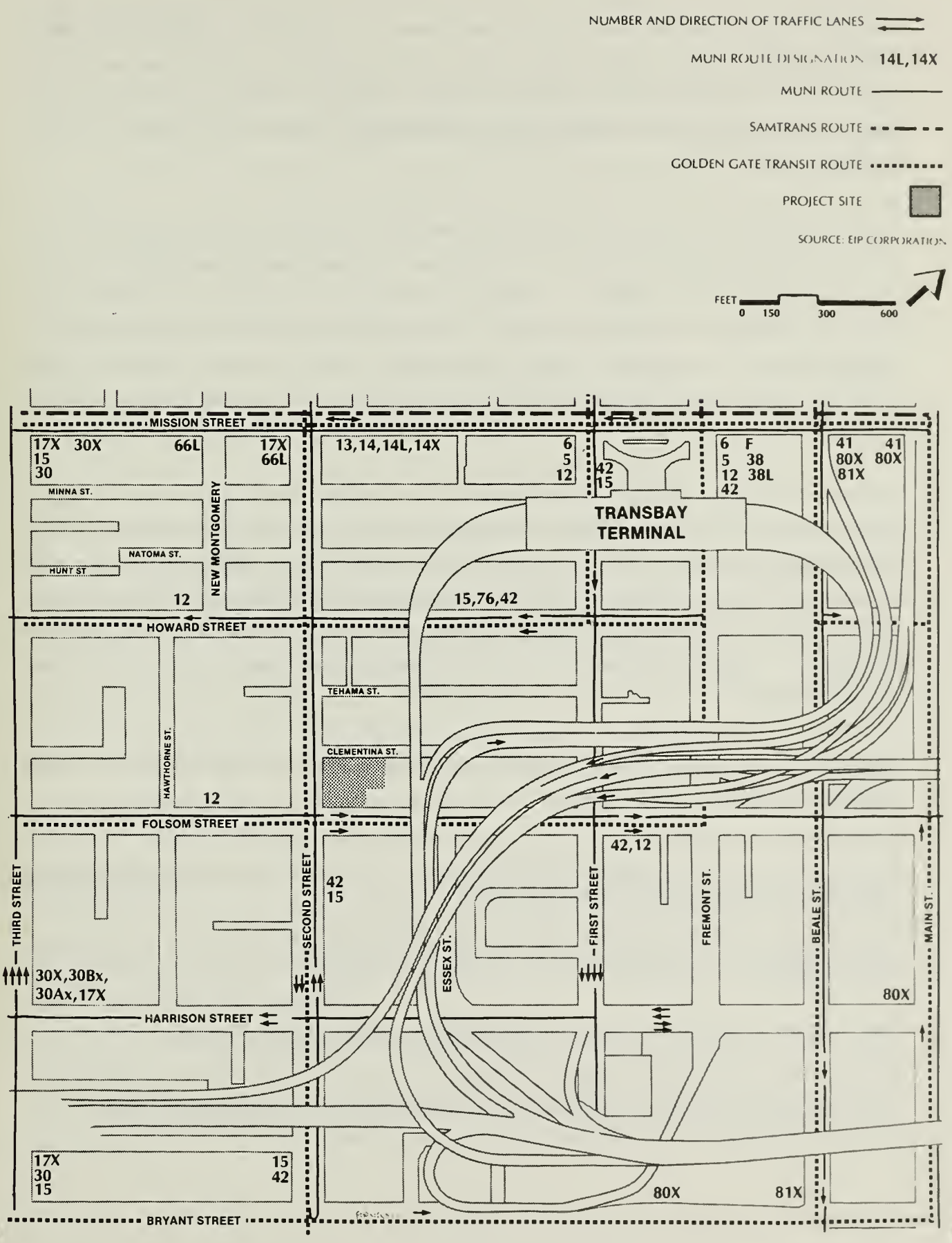
Clementina Street's existing p.m. peak-hour volume is about 75 vehicles (approaching First Street). This volume primarily reflects primarily traffic generated by existing curb parking and off-street lots. Through traffic is limited and the existing traffic flow on Clementina could be described as stable with little congestion. First Street is a heavily traveled link between the downtown and eastbound ramps to the Bay Bridge. First Street currently carries 1,200-1,300 p.m. peak-hour vehicles north of Folsom. As a result of congestion on the bridge, p.m. peak-hour traffic on First Street backs up through the First/Harrison intersection with queues sometimes extending through the First/Folsom intersection. These conditions can be described as service level E-F. At these times vehicle volumes drop below 1000 peak hour vehicles because of slow moving traffic. Second Street is not constrained by Bay Bridge queuing, and peak-hour operation is at service level A for the Second/Folsom and Second/Howard intersections.

Regional access to the project from the East Bay and Peninsula is available via I-80 off-ramps at Fremont/Harrison and Fremont between Folsom and Howard. On-ramps for the Bay Bridge are located at Harrison/First, Harrison/Essex and Bryant/Sterling (only high-occupancy vehicles and trucks from 3:00-7:00 p.m.). Access to Highway 101 and the Peninsula is via on-ramps at Fourth/Harrison and off-ramps at Fourth/Bryant. Access to and from the North Bay is less well-defined, but is via surface street connections to the Embarcadero and Van Ness corridors.

Within a quarter-mile (2-3 block) walking distance of the site, a total of 24 Muni lines are in operation (see Figure 16, page 43). AC Transit, Golden Gate Transit and San Mateo Transit bus services are available at the Transbay Terminal at Mission and First Streets.

EXISTING STREET NETWORK AND TRANSIT SERVICE

FIGURE 16



In addition, Golden Gate Transit bus service operates along Howard and Folsom Streets, and SamTrans service operates along Mission Street. The BART/Muni Montgomery Street station is about three to four blocks north of the project site. The Southern Pacific station (at Townsend/Fourth) is about six blocks southwest of the site. Each of these systems is accessible via a longer walk or a transfer from various Muni lines in the South of Market area.

The project site lies within the parking belt designated in the Transportation element of the Comprehensive Plan (page 47). The Downtown Plan encourages the short-term use of existing parking spaces within and adjacent to the downtown core by converting all-day commuter parking to short-term parking in areas of high demand.[2] The project site now contains 74 long-term parking spaces. The project vicinity (an area bounded by Main, Townsend, Fourth and Market) contains 60 parking lots with 11,162 spaces. Average midday occupancy is 87%.[3]

Adjacent to the site, sidewalk widths are 8 feet on Clementina Street, 15 feet on Second Street and 10 feet on Folsom Street. The effective widths (allowing for street trees, signs and parking meters) are 6 feet, 13 feet and 7 feet, respectively. These widths correspond to the official widths mapped by the City. Existing pedestrian flow conditions are "open" on the Clementina, Second and Folsom Street sidewalks during both the p.m. and noon peak hours. Cross-walks across Second and Folsom are also "open" during the p.m. and noon peak hours.[4]

The City's Comprehensive Plan identifies Howard and Folsom Streets as bicycle routes (without specific bike lane striping).

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[1]Department of City Planning, City and County of San Francisco, Transportation on Element of the Master Plan, January, 1983.

[2]Downtown Plan Proposal as adopted by the City Planning Commission, November 29, 1984, page 116.

[3]Jon Twichell/Associates, South of Market Short-term Parking Analysis, October 15, 1984.

[4]Field review by George W. Nickelson, EIP traffic engineer, on September 28, 1983.

F. AIR QUALITY

The Bay Area Air Quality Management District (BAAQMD) operates a regional monitoring network which measures the ambient concentrations of six air pollutants: ozone (O_3), carbon monoxide (CO), total suspended particulates (TSP), lead (Pb), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). On the basis of the monitoring data, the Bay Area, including San Francisco, currently is designated a non-attainment area with respect to the federal ozone and CO standards. A three-year summary of the data collected at the BAAQMD monitoring station nearest the project site (about two miles south-southeast of the site at 900 23rd St.) is shown in Appendix F, page A-52, together with the corresponding federal and/or state ambient air quality standards. In 1983, there was one violation of the federal and state one-hour average ozone standards and four violations of the state 24-hour average TSP standard; in 1982 there was one violation of the federal and state eight-hour standard, and three violations of the state 24-hour average TSP standard; and in 1981 there was one violation of the state 24-hour average TSP standard.

A CO "hotspot" monitoring program was conducted during the winter of 1979-80 at the intersection of Washington and Battery Streets, about .75 miles northwest of the site.[1] The high eight hour average concentration was 10.1 ppm, which violates the 9-ppm state and federal standards by 1.1 ppm. The high one-hour average concentration of 15 ppm does not violate the 20-ppm state standard or the 35-ppm federal standard. Another CO hotspot monitoring program was conducted during the winter of 1980-81 at the intersection of Geary and Taylor Streets, about 1 mile northwest of the site, and at 100 Harrison Street at Spear, about one-half mile east of the site.[2] At Geary and Taylor the observed high eight-hour average concentration was 11.5 ppm which violates the standards by 2.5 ppm and the high one hour concentration was 15 ppm which does not violate the standards. At Harrison Street the observed high eight-hour and one-hour average concentrations were 7.8 ppm and 13 ppm, respectively, which do not violate the standards. These data indicate that locations in San Francisco near streets with high traffic volumes and congested flows may experience violations of the eight-hour CO standard during adverse meteorological conditions.

Comparisons of these data with those from other BAAQMD monitoring stations indicate that San Francisco's air quality is among the least degraded of all the developed portions of the Bay Area. Two of the three prevailing winds, westerly and northwesterly, blowing

off the Pacific Ocean reduce the potential for San Francisco to receive pollutants from elsewhere in the region.

San Francisco's air quality problems (primarily CO and TSP) are due largely to pollutant emissions from within the City. CO is a non-reactive pollutant with one major source category, motor vehicles. Ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. TSP levels are relatively low near the coast, increase with distance inland, and peak in dry, sheltered valleys. The primary sources of TSP in San Francisco are demolition and construction activities, and motor vehicle travel over paved roads.

San Francisco contributes to air quality problems (primarily ozone which is a regional problem) in other parts of the Bay Area. Ozone is not emitted directly, but is produced in the atmosphere over time and distance through a complex series of photochemical reactions involving emitted hydrocarbons (HC) and nitrogen oxides (NO_x) which are carried downwind as the photochemical reaction occurs. Ozone standards are exceeded most often in the Santa Clara, Livermore, and Diablo Valleys, because local topography and meteorological conditions favor the buildup of ozone and its precursors there.

In 1979, emissions from motor vehicles were the source of 94% of the CO, 36% of the hydrocarbons (HC), 7% of the TSP, and 44% of the nitrogen oxides (NO_x) in San Francisco, while power plant fuel combustion was the largest single source of sulfur oxides, about 33% of the total. These percentages are expected to apply reasonably well to current conditions.[3]

In response to the Bay Area's ozone and CO nonattainment designations, ABAG, BAAQMD, and the Metropolitan Transportation Commission (MTC) prepared and adopted the 1982 Bay Area Air Quality Plan, which establishes pollution control strategies to attain the federal ozone and CO standards by 1987 as required by federal law.[4] These strategies were developed on the basis of detailed subregional emission inventories and projections, and mathematical models of pollutant behavior, and consist of stationary and mobile source emission controls and transportation improvements. The BAAQMD, MTC, and California Bureau of Automotive Repair have primary responsibility for implementation of these strategies.

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[1]Association of Bay Area Governments, AQMP Tech Memo 33, "Summary of 1979/1980 Hotspot Monitoring Program," Berkeley, California, June 1980.

[2]Association of Bay Area Governments, AQMP Tech Memo 40, "Results of the 1980/1981 Hotspot Monitoring Program for Carbon Monoxide," Berkeley, California, January 1982.

[3]Bay Area Quality Management District (BAAQMD), Base Year 1979 Emissions Inventory, Summary Report (Revised), San Francisco, California, July 1, 1982.

[4]Association of Bay Area Governments (ABAG), BAAQMD and MTC, 1982 Bay Air Quality Plan, Berkeley, California, December 1982.

G. EMPLOYMENT AND HOUSING

1. Employment

Approximately 104 employees currently work in the buildings occupying the project site. Of the total number, 98 are office workers and 6 are retail workers.[1] All floor area in both 299 Second Street and 590 Folsom Street, Lots 27, 29 and 35 is currently occupied.

2. San Francisco and Regional Office Space

a. Existing Office Space in San Francisco

San Francisco is the major office center in the Bay Area, with approximately 60.6 million gross square feet of office space at the end of 1982.[2] The C-3 District had 55.3 million square feet of office space in 1981 and currently has about 62.1 million square feet of office space in 1984.[3] Historical data indicates that office space was added at average rates of 1.5 million square feet per year during the 1970s and 2.4 million square feet per year from 1980 through 1982.[2]

Approximately 19.0 million square feet of net new office space is currently proposed or under construction, but not occupied, in San Francisco. Of this space, 8.7 million is under formal review, 4.8 million has been approved and an additional 5.5 million is under construction or newly constructed. Table C-1 in Appendix C, page A-32, shows the specific projects from which these numbers are taken.

b. Vacancy Rates and Commercial Rents

On the basis of a May 1984 survey of 290 office buildings, the San Francisco Building Owners and Managers Association (BOMA) reported a citywide vacancy rate of 7.0%, a decrease from the 7.1% rate found in the October 1983 BOMA survey.[4] According to the September 30, 1984 Coldwell Banker survey, the vacancy rate in downtown San Francisco office buildings (new, existing and major renovations) was 9.0%, an increase from the 5.9% reported in the December 1983 Coldwell Banker survey. The current 9.0% vacancy rate is the fifth lowest of the 28 major downtown financial districts in the United States surveyed by Coldwell Banker. For comparison, as of September 1984, the vacancy rate was 14.2% nationally; 10.1% in Chicago; 7.1% in downtown Manhattan; and 15.3% in Dallas.[5]

One effect of the historical shortage of office space in San Francisco has been to stimulate office development and increase demand for existing space elsewhere in the Bay Area. Some businesses have moved their clerical, support and production departments to outlying areas while maintaining headquarters and main branch offices in San Francisco. In particular, the City of Oakland, and San Mateo and Contra Costa counties are experiencing increased demand for office space. For example, about 17 million square feet of office space is proposed or under construction in San Mateo County.[6] This includes projects in various stages of public review, not all of which may be approved or built.

As a result of high demand and increasing operating costs in San Francisco annual rents for office space in the downtown financial district increased steadily throughout the 1970s to approximately $30 per square foot in 1982. New buildings are able to charge the highest rents, while office rents in older buildings south of Market are less expensive, averaging between $15 and $25 per square foot.[7] The rents for new office space in San Francisco ($28 to $40) are about 40-60% higher than commercial rents in Oakland ($20 to $25 per square foot); the Peninsula ($18 to $22 per square foot); and Walnut Creek ($22 to $30 per square foot). Should vacancy rates rise, the pressure for higher commercial office rents would be expected to decline in San Francisco. A rising vacancy rate could lower rents and increase future lessees' choice of size, layout and location of office space.

3. Housing Supply

There were about 320,230 housing units in San Francisco as of January 1984, according to the State Department of Finance.[8] About two-thirds of the stock is rented and one-third is owner-occupied.[9] Housing production in the City (as measured by building permits issued) has been predominantly multi-family housing. Between 1978 and 1980, 84% to 87% of residential building permits were for multi-family housing; in 1981 that figure increased to 95%.[10]

The nature of the multi-family housing stock (including townhouses, condominiums and apartments) in the City is changing because of conversion of rental units to condominiums and conversion of residential hotels to other uses. Under the Subdivision Code as revised in 1982, the City allows conversion of 200 units of rental housing to condominiums per year. In 1981, about 40% of rental units converted to condominiums were estimated to be

owner-occupied.[11] It is further estimated that from 1975 to 1980, approximately 3,700 residential hotel units were demolished or converted to commercial or tourist uses.[12] The demolition and conversion of residential hotel units are regulated by Chapter 41 of the San Francisco Administrative Code, as amended, June 15, 1981 and July 18, 1983.

Several factors indicate that housing demand in San Francisco has heightened over the past decade. The number of households increased by 1.3% from 1970 to 1980 despite a 5.6% decrease in total population. This reflects a decrease in the size of households in San Francisco from 2.34 persons to 2.19 persons, which is a trend typical of many areas during this time.[13] Although the number of housing units in the City increased by 1.9% over this period, by 1980 the vacancy rate, which indicates the balance between housing supply and demand, remained low at about 0.6% for owner-occupied housing and about 2.7% for rental housing.[14] A survey conducted by the Federal Home Loan Bank of San Francisco in September 1983 indicated a vacancy rate of 0.9% for multi-family units and 1.2% for single-family houses.[15] A vacancy rate of four to five percent indicates a competitive market; the very low rate in San Francisco means that people looking for housing are having difficulties finding new residences. This high demand for housing may also cause further prices increases.

The average market value of a single-family house in the Bay Area was about $143,400 in 1983; the 1983 San Francisco average was about $156,600. San Francisco experienced the greatest increase in average market value of all Bay Area cities over the past five years.[16] In 1980 the median contract rent was $267,[17] which in 1984 dollars would amount to more than $341.

The percentage of San Francisco's employed population that works in the City has decreased from more than 80% in 1970 to 75% in 1980. This suggests that fewer people who are finding work in the City are also finding housing here. However, the number of San Francisco residents working in the financial, insurance and real estate (FIRE) sectors increased during this period by more than 6,000. This represents about 33% of the total increase for jobs in this sector of the City.[18] The Department of City Planning projects that as many as 40% of office workers would desire to move to San Francisco upon finding work in the City.

In addition to the above-noted decrease in household size, other sources of pressure on San Francisco's housing demand include the expansion of downtown office space, increased land, labor and materials costs, immigration from abroad, high interest rates, and limited land for housing. There are also regional housing impacts. There were just over two million housing units in the nine-county Bay Area in 1980. About one-third of the units were in the East Bay (Alameda and Contra Costa counties), about one-third on the Peninsula (San Mateo and Santa Clara counties), about 16% in San Francisco, 10% in the North Bay (Marin and Sonoma counties) and 6% in Solano and Napa counties.[19]

The limited information available on housing production in Bay Area counties suggests that the markets have been depressed in recent years. Regionally, single-family permits declined in 1979, 1980 and 1981. Alameda, Contra Costa, San Francisco, San Mateo and Sonoma County single-family permit issuances rose from 1978 to 1979, but then declined in 1980. Regional multi-family rental unit permits have declined every year between 1977 and 1981. Conversely, condominium permits increased between 1977 and 1980 and decreased in 1981.[20] The housing recovery trend in the Bay Area during the fourth quarter of 1983 showed a 99% increase in building permits issued over the level reported during the fourth quarter of 1982.[21]

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[1]Based on employment survey conducted by Environmental Planning Impact Corporation. October 1, 1984.

[2]San Francisco Department of City Planning, Major Office Building Construction in San Francisco Through 1982, March 15, 1983.

[3]San Francisco Department of City Planning, Downtown Plan EIR, EE.81.3, certified October 18, 1984, pages IV.B.2 and IV.B.17.

[4]Elmer Johnson, Building Owners and Managers Association, telephone conversation, February 21, 1984. Updated November 12, 1984.

[5]Coldwell Banker, Office Vacancy Index of the United States, December 31, 1983. San Francisco vacancy rates are part of a national survey of 28 major downtown districts conducted quarterly. A copy of the December 1983 survey is on file and available for public review at the Office of Environmental Review, 450 McAllister Street, Fifth Floor.

[6]Blayney-Dyett, Urban and Regional Planners, Proposed Specific Plan: Bayshore Office Park and Baylands Development Area, Brisbane, California, July 1982; and Metropolitan Transportation Commission, Travel Impacts of Proposed Development on the Peninsula Along Route 101, September 9, 1982.

[7]William Cumbelich, Senior Sales Consultant, Office Building Specialist, Coldwell Banker, telephone conversation, February 24, 1984.

[8]California Department of Finance, Population Research Unit, Population and Housing Estimates for California Cities and Counties, Summary Report E-5, April 27, 1984.

[9]U.S. Bureau of the Census, 1980 Census Information, File STF 1-A, Report #4, March 1982, Tables 25 and 26.

[10]ABAG, San Francisco Bay Area Housing Activity Report, No. 4, May 1982, page 21.

[11]San Francisco Department of City Planning, Condominium Research, Preliminary Progress Report, December 1981.

[12]San Francisco Department of City Planning, A Study of the Conversion and Demolition of Residential Hotel Units, December 1980, page 17.

[13]San Francisco Department of City Planning, Residence, A Proposal for Citizen Review, June 1982, Table 4.

[14]Real Estate Research Council of Northern California, Northern California Real Estate Report, Vol. 33, No. 1, April 1981. Updated to October 1982 by James Davis, Executive Director, telephone conversation, December 28, 1982.

[15]Federal Home Loan Bank of San Francisco, "San Francisco County Housing Vacancy Survey," April 1984.

[16]Data provided in Northern California Real Estate Report, Volume 34, Number 3, Real Estate Research Council of Northern California, updated in telephone conversation with James Davis, Executive Director, February 24, 1984.

[17]1980 Census Information, File STF1-A, op. cit., Housing, Table 44. Escalation to 1984 dollars based on a 27.9% increase in the Consumer Price Index.

[18]U.S. Bureau of the Census, Population Census 1970 and 1980, and County Business Patterns 1970 and 1980.

[19]Real Estate Research Council of Northern California, op. cit.

[20]ABAG, San Francisco Bay Area Housing Activity Report, No. 4, May 1982.

[21]Real Estate Research Council of Northern California, Real Estate and Mortgage Finance Trends, No. 154, March 1, 1984.

H. NOISE

The major noise source in the project vicinity is traffic on Second and Folsom Streets. Noise measurements made in May 1981 directly across Folsom Street from the project site showed an L_{eq}[1] of 73 dBA[2] with instantaneous noise events up to 87 dBA.

The City and County of San Francisco Board of Supervisors has adopted the day/night average noise level (L_{dn})[3,4] to describe community noise environments. The L_{dn} is a single number noise rating used to describe the average noise level over a 24-hour period. For traffic noise environments, the L_{dn} is approximately equal to the peak-hour L_{eq}.

The impact of construction and operation noise on the uses inside nearby buildings is dependent upon distance from the source of the noise as well as the amount of noise reduction experienced between the outside and inside of the building. An open window would increase noise levels by about 15 dBA, while fixed windows would reduce noise levels by about 30 dBA.

The occupied land uses near the proposed site are office buildings on Second and Folsom Streets. An office building is approved for construction directly south across Folsom Street from the project site. This building would have fixed windows and be mechanically ventilated.

The Pacific Bell office building on Second Street, on the southwest corner of the Second and Folsom Street intersection, has a building facade with window glass covering 10% of the surface; all windows are operable. This building houses the wire center (i.e., mechanisms for telephone switching) for San Francisco. There are few offices in this building; it is principally filled with equipment.

A small Victorian office building across Second Street to the west of the project has operable windows. Six units of residential space with operable windows are located within 50 feet east of the project along Folsom Street.

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[1] L_{eq}: The equivalent steady-state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period.

[2]dBA: Decibel corrected for the variation in frequency response to the typical human ear at community-encountered noise levels.

[3]L_{dn}: An averaged sound level measurement, based on human reaction to cumulative noise exposure over a 24-hour period, which takes into account the greater annoyance of nighttime noises. Noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

[4]Persons unfamiliar with the terminology and fundamental concepts of environmental acoustics are referred to Appendix D, page A-45.

IV. ENVIRONMENTAL IMPACTS

A. ISSUES NOT ADDRESSED

An Initial Study was prepared for the 299 Second Street Project to identify its potential environmental effects; these issues are covered in this EIR. Certain potential environmental issues were determined to be insignificant and are therefore not addressed in this EIR. These include Construction-Related Air Quality Impacts; Light and Glare; Operational Noise; Impacts from Odors/Burning of Materials; Utilities and Public Services (with the exception of Fire Protection Services); Geology/Topography; Water; Hazards; Cultural Resources and Biology. A copy of the Final Initial Study is attached to this report as Appendix A, page A-1.

Not all issues covered in the EIR are physical environmental impacts as defined under the California Environmental Quality Act (CEQA). They are provided for informational purposes only.

B. LAND USE AND ZONING

The proposed structure would contain a mix of office and restaurant/retail space totalling about 329,075 gross square feet (gsf), with approximately 267,760 gsf of office space, approximately 5,580 gsf of restaurant space, and about 10,000 gsf of retail use. Two basement levels of the structure would contain approximately 45,735 gsf of parking, which would provide about 131 short-term, independently accessible parking spaces. Pursuant to Section 161(c) of the Planning Code, no off-street parking is required in a C-3 district. However, up to seven percent of the gross floor area of the structure, or 23,035 square feet (66 spaces), is allowed as an accessory use under Section 204.5(c) of the Planning Code and can be excluded from FAR calculations under Section 102.8(b)7 of the Interim Controls. All structures currently on the site would be demolished.

The proposed project would increase the density of office development on the site. Office space would be increased by 232,760 gsf (267,760 gsf proposed, less 35,000 gsf existing), restaurant space would be increased by 3,630 gsf (5,580 gsf proposed, less 1,950 gsf existing), and retail space by 10,000 gsf (10,000 gsf proposed, less no existing space). There would be an increase of 57 parking spaces (131 proposed spaces, less 74 existing).

1. Planning Code

In order to provide for an orderly expansion of the financial district in a way that will maintain a compact downtown core, and to create an area in which to direct unused development potential of lots containing Significant or certain Contributory buildings, a special use district known as the Downtown Office Special Development District (also referred to as the C-3-0 (SD) District) has been created through the Interim Controls to implement the Downtown Plan. Development at densities above the base floor area ratio in this area is appropriate only if there is a commensurate reduction in the allowable density of development on other sites in the downtown by the transfer of development rights from eligible sites as provided in Section 128 of the Interim Controls. The base FAR for the project site would be 6:1, but up to 75% of the ground-floor uses and ground level open space that would be excluded from the FAR calculations in the C-3-0 district (see page 29 of the Downtown Plan) could be excluded here as well. The project contains 26,027 gsf of ground-floor uses and ground level open space; up to 75% (19,520 gsf) of that total (not to exceed 5,000 gsf per use) could be excluded from FAR calculations under

Section 102.8(b)13 of the Interim Controls. Additionally, pursuant to Section 102.8(b)14 space qualifying as open space can be excluded from FAR calculations. Therefore, the proposed project could exclude 15,805 gsf (5,000 gsf of restaurant; 5,000 gsf of retail; 5,805 gsf of open space) from its gross floor area for the purpose of calculating the project FAR. Thus, under Downtown Plan guidelines, the effective FAR for the project would be 9.4:1.[3] Floor area in excess of the base FAR of 6:1 would be achieved via use of Transferable Development Rights pursuant to Section 128 of the Interim Controls.

The project is located in a 200-S height and bulk district and conforms to height requirements of the Planning Code. With regard to bulk, the maximum height above which the length and diagonal dimensions apply is 100 feet. Between 100 and 160 feet, the maximum permitted building width is 160 feet, and the maximum permitted diagonal dimension is 200 feet. Above 160 feet, the maximum permitted building width is 140 feet, and the maximum average diagonal dimension is 160 feet. The new building would not conform to these bulk requirements above 160 feet, and would require Conditional Use authorization from the City Planning Commission pursuant to Section 303 of the Planning Code. A balcony at the 13th floor of the project would require review under Section 303, as it would exceed bulk requirements.

The project site is located in a C-3-0 (SD) district, designated in the Downtown Plan as a receiver area for the transfer of development rights from architecturally significant and contributory buildings, or under certain circumstances, from unrated buildings in some conservation districts. The C-3-0 (SD) district is intended to serve as an extension of the downtown office district.

Pursuant to Section 153(a)6 of the Planning Code, two service vehicle spaces can be substituted for one full-size loading space. The project would include three full-size spaces and two service vehicle spaces, thus conforming to Planning Code requirements.

Table 2, page 59, compares the proposed project to the Planning Code as amended by the Downtown Plan Interim Controls. The project would conform with Downtown Plan Interim Controls for height, provision of ground floor uses, open space, transportation systems management, off-street loading, and incorporation of art. The project would

TABLE 2
COMPARISON OF THE PROJECT TO DOWNTOWN PLAN INTERIM CONTROLS

Development Control	Interim Controls to Implement Downtown Plan	Project
Base FAR (Section 124)	6:1	9.4:1[1] (Through the use of TDRs at Section 128 of permanent Controls)
Height Limit (Exhibit B, Interim Controls)	200'	200'
Bulk (Section 270)		
Base		
Height	Up to 1.25 x width of the street (Second Street = 80'); full site coverage up to 100'	Project would conform to Downtown Plan Interim Controls; full site coverage up to 50'
Lower Tower	from 100' - 160'	from 50' - 162.5'
Maximum Diagonal	200'	196'
Maximum Width	160' max. ave. floor space = 20,000 gsf	158' max. ave. floor area = 19,250 gsf
Upper Tower	from 160' - 200'	from 162.5' - 200' (Project exceeds bulk limits of Interim Controls for upper tower from 160' to 162.5')
Maximum Diagonal	160'	152'
Maximum Width	140' max. ave. floor size = 12,000 gsf max. floor size = 17,000 gsf	133' max. ave. floor size = 12,760 max. floor size = 15,700 gsf

(continued)

TABLE 2
COMPARISON OF THE PROJECT TO DOWNTOWN PLAN INTERIM CONTROLS

Development Control	Interim Controls to Implement Downtown Plan	Project
Setbacks (Section 132.1)	15' setback on east side of project site	Project would include a setback of 10' along the interior lot line, 5 feet less than the required 15', but could be allowed by Conditional Use authorization pursuant to exception provision in Section 132.1(c).3.
	On Clementina Street: minimum 4' sidewalk widening, 14' setback at streetwall height of 60'	(Project would conform to Downtown Plan Interim Controls)
Wind (Section 148)	11 mph in pedestrian areas; 7 mph in public seating areas	Project would conform to Downtown Plan Interim Controls
Exclusion of Floor Area		
(Section 102.8(b)13)	Up to 75% of interior floor area and ground level open space permitted for exclusion from FAR is allowed, not to exceed 5,000 gsf per use.	26,027 sq. ft. of ground floor uses; up to 19,520 gsf can be excluded from FAR calculation, including restaurant and retail space. Project would exclude 5,000 gsf of retail space and 5,000 gsf of restaurant space.
(Section 102.8(b)14)	All open space required by Section 138 (see below).	Project would exclude 5,805 gsf of open space.
Recreation/Open Space (Section 138)	1 sq. ft. open space/50 gsf of gross floor area = 5,805 sq.ft.	Project would include 5,805 sq.ft., in conformance with Downtown Plan Interim Controls requirement.

(continued)

TABLE 2
COMPARISON OF THE PROJECT TO DOWNTOWN PLAN INTERIM CONTROLS

Development Control	Interim Controls to Implement Downtown Plan	Project
Parking (Sections 204.5(c), 157,158, and 303 of Planning Code and Interim Controls)	Downtown Plan has no requirement (Discourages new long-term parking in downtown). 7% of gsf = 23,035 allowed as accessory use.	131 short-term, independently accessible spaces, or 45,735 gsf. 23,035 gsf (66 spaces) allowed as accessory use; 22,700 gsf (65 spaces) considered as Conditional Use.
Off-street Loading (Section 152.5)	0.1 spaces per 10,000 gsf of office space; 1 space per 10,000-30,000 gsf of restaurant/retail space. 4 spaces are required.	3 full-size and 2 service vehicle spaces provided[3]
Incorporation of Art (Section 149)	Art equal to 1.5% of total construction costs.	Project would conform to Downtown Plan Interim Controls.
Shadows on Property Under Jurisdiction of Recreation and Park Commission (Section 295)	No shadows cast on Recreation and Park Department property between first hour after sunrise and last hour before sunset.	Project would conform to Interim Controls.

(continued)

TABLE 2
COMPARISON OF THE PROJECT TO DOWNTOWN PLAN INTERIM CONTROLS

Development Control	Interim Controls to Implement Downtown Plan	Project
Transportation Management Programs (Section 163)	Provision of transportation brokerage services for projects with at least 100,000 gsf of office space.	Project would conform to Interim Controls.
Vertical Extensions (Section 260(b)(1)(G)	Vertical extensions, such as spires, permitted up to 75 feet above the height otherwise allowed.	Project would conform to Interim Controls.
Mechanical Penthouse (Section 260(b)(1)(F)	Not to exceed 20 feet above the height otherwise allowed, measured at the average height of the slope of the rooftop (Section 260(a)(2)).	Project mechanical penthouse equal to 20' in height.

[1]The Downtown Plan restricts ground floor uses in the C-3-O district to: retail; building circulation; open space features; pedestrian circulation; cultural, religious, social service, recreational and educational facilities available to the general public; and building service. Uses other than open space can be excluded from calculations of allowable gross floor area, up to 75% of the interior floor area and not to exceed 5,000 gsf per use. One hundred percent of ground level open space can be excluded. As calculated under the Downtown Plan, the project FAR would be 9.4:1.

[2]The Planning Code requirements have been superseded by Resolution 9286, passed January 21, 1984 making the off-street loading requirements the same as those of the Downtown Plan.

[3]Planning Code amendments to implement Downtown Plan, at Section 153(a)6, allows substitution of two service vehicle spaces for one full-size space.

conform to setback exception requirements of the Interim Controls. The project would conform to Sections 157, 158, 204.5(c), and 303 regarding that portion of the parking area (22,700 gsf) considered as a conditional use.

The project would not conform to the bulk requirements for the upper tower, at Section 270(d)(3) of the Interim Controls. While maximum diagonal and maximum width dimensions essentially conform to the Interim Controls (see Table 2, page 59), maximum average floor size is 12,760 gsf, in excess of the 12,000 gsf permitted. Further, there is no distinct stepback at the thirteenth floor, where the upper tower begins. Instead, a screen wall to create a visually apparent transition between the lower and upper towers continues above the stepback line, while the floor area of the upper tower floors is reduced from the lower tower floor area average. The screen wall would require approval by the City Planning Commission under Section 272 of the Interim Controls. Such approval would require a determination that a distinctly better design is achieved while carrying out the intent of the bulk limits, or that the building provides significant public service benefits, and that the added bulk does not add significant wind and shadow impacts or affect light and air to adjacent structures, that the design incorporates features intended to mitigate the increased bulk and that the building is made compatible with the character of the surrounding area in terms of building pattern, height, facade materials and preservation of the pedestrian environment.

2. Comprehensive Plan

There are several objectives and policies of the Commerce and Industry Element[4] that would apply to the proposed project. The discussion below analyzes the relationship of the project to those objectives and policies.

> Objective 6: "Maintain and improve San Francisco's position as a prime location for financial, administrative, corporate and professional activity." (page 24)
>
> Policy 1: "Encourage continued growth of prime downtown office activities so long as undesirable consequences of such growth can be avoided." (page 24)
>
> Policy 2: "Guide location of office development to maintain a compact downtown core so as to minimize displacement of other viable uses." (page 25)
>
> Policy 3: "Assure that downtown development is compatible with the design and character of San Francisco." (page 26)

Policy 4: "Provide adequate amenities for those who live, work, and use the downtown." (page 27)

The project would supply office and retail space to meet the needs of San Francisco's expanding financial, insurance, real estate (FIRE) and administrative activities.

The project would maintain a compact downtown core by replacing and intensifying office, restaurant and retail uses. In addition, the site is accessible to a range of travel modes including Muni, AC Transit, BART and the regional freeways. Further, the project's location would be compatible with existing development, as well as uses proposed in both the Downtown Plan and the Rincon Hill Plan.

Towards meeting the policy of providing adequate amenities for downtown residents and workers, the proposed project at this stage of the design process would include 5,805 square feet of open space in the form of sitting areas and a greenhouse, 10,000 square feet of retail space, and 5,580 square feet of restaurant space. The amount of open space included in the project is equivalent to the amount required under the Downtown Plan.

Shops and restaurants--amenities offered by the proposed project--would enhance the commercial viability of this part of Second Street. The proposed project's location on Second and Folsom, one block from the Moscone Center, encourages use of the retail facilities by conventioners, both during the daytime and evening. The project would also be within walking distance of proposed residential uses on Rincon Hill. In addition, the project site's accessibility by public and private transportation promotes its use by local and regionally based consumers.

---

[1] City and County of San Francisco, Department of City Planning, The Downtown Plan, August 1983, amended June, October, and November, 1984, page 23.

[2] Ibid., page 26.

[3] City and County of San Francisco, Department of City Planning, Amendments to the Planning Code to Implement the Downtown Plan (Interim Controls), November 29, 1984, Section 102.8(b)13. Calculation of FAR is as follows: total gross floor area = 329,075 gsf; 7% exclusion for accessory parking area = 23,035 gsf; ground floor uses exclusion =

15,805 gsf. Net gross floor area = 290,735 gsf; project site area = 30,890 gsf. FAR = 290,735 gsf/30,890 gsf = 9.4:1.

[4]City and County of San Francisco, Department of City Planning, Commerce and Industry Element of the Comprehensive Plan, adopted by Resolution No. 8001 of the City Planning Commission on June 29, 1978.

C. URBAN DESIGN AND VISUAL QUALITY

Visual impacts of the proposed project would derive from its physical layout, size, shape, bulk, height, construction materials and landscape elements. Principal areas of concern about the project's visual and design impacts include the potential for view blockage from surrounding areas; architectural compatibility of the proposed building with surrounding buildings; and mass and scale relationships between the project, adjacent structures and the pedestrian environment.

The proposed project would affect the existing visual character of the South of Market area near the intersection of Second and Folsom Streets. The project would be viewed from Second Street looking both north and south, and along Folsom Street looking east and west within a one- to two-block distance from the project site. Mid-range views of the project would principally be from freeway overpasses near the site. Longer-range views would be obtained from Potrero Hill.

The four-story base would be 50 feet high along Folsom Street and 60 feet high along Clementina Street because of the site's slope. The building's nine-story lower tower would rise to about 162.5 feet above ground level, with the upper tower rising from 162.5 feet to 200 feet. The highest point of the building, the tower extension, would be the top of a sloping penthouse roof set at 228 feet above Folsom Street (Figures 17, 18 and 19, pages 67 through 69).

A number of policies contained in the Urban Design Element of the San Francisco Comprehensive Plan, to which the project may be compared for visual quality and urban design issues, relate to the project area and the proposed building. The Urban Design Element guides new development to enhance the physical environment. The discussion below compares the project to the policies of the Urban Design Element.

Major New Development Policy 3: "Promote efforts to achieve high quality of design for buildings to be constructed at prominent locations (page 36)."

The discussion under Policy 3 notes:

> Certain buildings will achieve visual prominence, whatever their design, because of their exposed locations. Among such locations are ... those facing wide streets or

PHOTOMONTAGE: LOOKING NORTH ON SECOND STREET

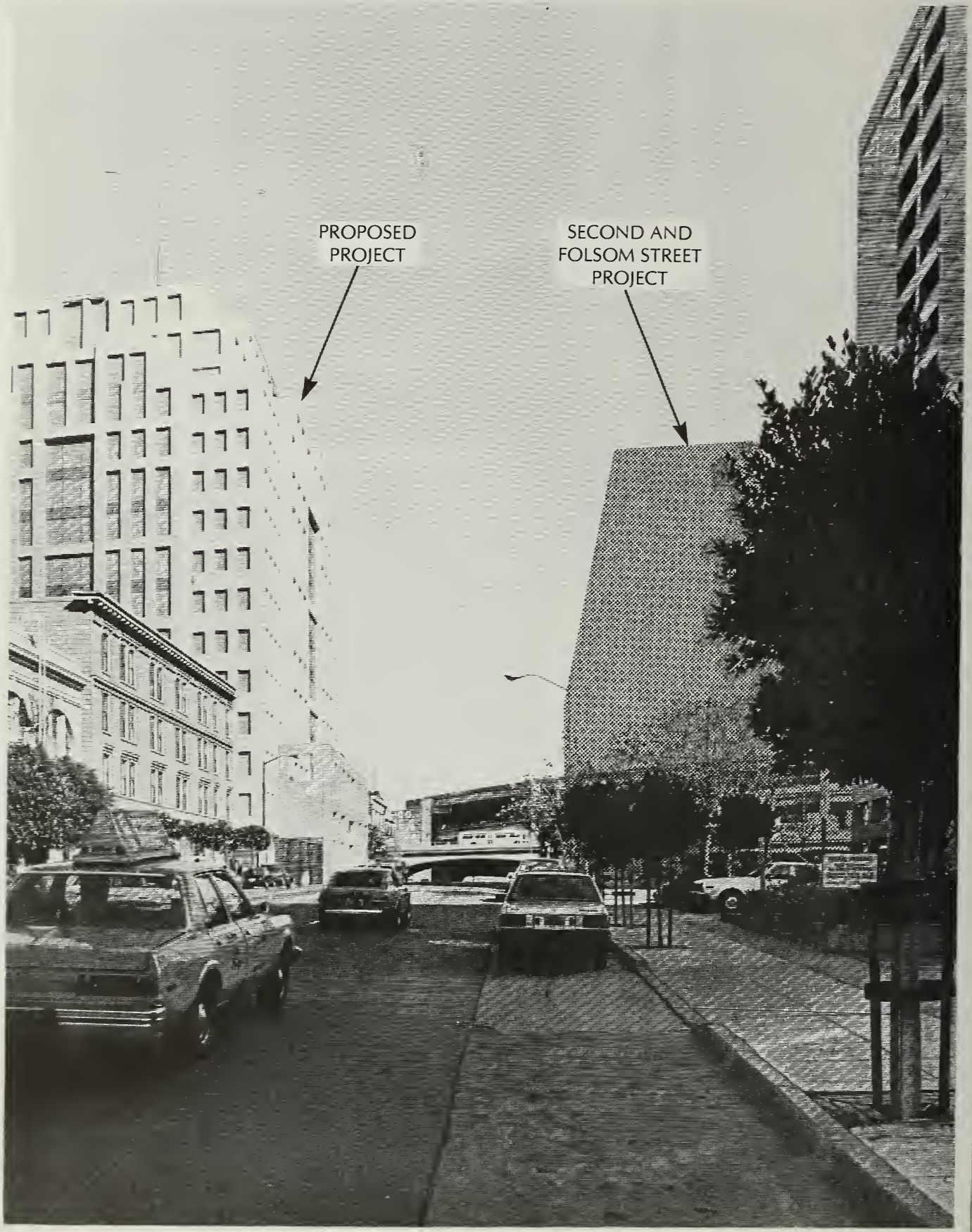
FIGURE 17

SOURCE: EIP CORPORATION

PHOTOMONTAGE: LOOKING EAST ON FOLSOM STREET

FIGURE 18

SOURCE: EIP CORPORATION



PHOTOMONTAGE: LOOKING SOUTH ON SECOND STREET

FIGURE 19

SOURCE: EIP CORPORATION

> closing the vista at the end of a street; and those affording a silhouette against the sky ... At locations of such prominence, the quality of building design is of special significance, and special efforts should be made to promote the best architectural solutions ... (page 36).

The project would form part of a complex of new development either built or in the process of construction at the intersection of Second and Folsom Streets. The overall "architectural solution" and its appropriateness is analyzed with respect to the policies of the Urban Design Plan as follows.

> City Pattern Policy 3: "Recognize that buildings, when seen together, produce a total effect that characterizes the City and its districts." (page 10)
>
> City Pattern Policy 6: "Make centers of activity more prominent through design of street features and other means." (page 12)

The project would contribute to the larger-scale pattern of buildings being constructed at the intersection of Second and Folsom Streets. The project would emphasize street space along Clementina, Folsom and Second Streets by its height and through its design, with an arcade wrapping around the building, open areas for sitting, and through the use of clear glass on the street-level retail areas.

> Conservation Policy 6: "Respect the character of other development nearby in the design of new buildings." (page 25)
>
> Major New Development Policy 1: "Promote harmony in the visual relationships and transition between new and older buildings." (page 36)
>
> Major New Development Policy 2: "Avoid extreme contrasts in color, shape and other characteristics which will cause new buildings to stand out in excess of their public importance." (page 36)
>
> Major New Development Policy 5: "Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development." (page 36)
>
> Major New Development Policy 6: "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction." (page 37)

Street-level retail establishments and restaurants lie in the project area at the Market/Second and Mission/Second intersections. There is also a cafe on the project site.

The ground floor of the proposed project would contain a restaurant with greenhouse windows and retail stores uncharacteristic of the majority of existing ground-floor patterns in the project block along Second Street, but similar to uses north of the project site. Windows throughout the building would be non-reflective for pedestrian viewing. The project's height, bulk and overall design would be larger than surrounding older buildings on Second Street to the north, but compatible with larger-scale development immediately to the south. The exterior texture of the building facade would be concrete and granite, similar to surfaces of newer structures, but different than the older wood-frame buildings in the project area. The building would be stepped back at the upper levels.

Visually, the 200-foot-high proposed project would be of similar height to other nearby highrises either under construction or recently completed. A 150-foot office building at the southeast corner of Second and Folsom Streets is approved for construction. The southwest corner of the intersection is occupied by an 18-story office building with a parapet screen wall set at 210 feet. The proposed project's 50-foot-high base would reflect the height of a four-story Victorian office structure at the northwestern corner of the intersection. However, the project would contrast with smaller-scale buildings aligning Second Street to the north and on the north side of Folsom Street.

The Downtown Plan policies for the vicinity include permitting office and office support uses up to 200 feet in height. The project site is adjacent to parcels with permitted heights up to 350 feet. Hence, differences in height and scale between the proposed project and surrounding smaller buildings could decrease in the future should new, taller buildings replace smaller buildings in the immediate project vicinity in accordance with the Downtown Plan.

The existing system of street trees and landscape elements along Second Street would continue along the project's frontage and be extended along Clementina Street.

The project would contain a four-story atrium, including a restaurant, along Folsom Street allowing natural light to penetrate interior portions of the building used by the public.

The Urban Design Plan discussion under Neighborhood Environment Policy 14 notes:

> "No other element in the street environment is more disrupting than exposed parking. Parking lots and open parking decks break the building facades and stand as large voids in visual interest. Exposed vehicles clutter the pedestrian's view and reduce the sidewalk to a narrow corridor between rows of automobiles." (page 57)

Removing the surface parking lots occupying part of the project site would contribute to the pedestrian sidewalk environment of the area. The two existing surface parking lots are accessed from Clementina Street. The project would include below-grade parking and a loading dock area. Both of those facilities would be accessed from Clementina Street so that pedestrian flow would not be altered.

Major New Development Policy 9: "Encourage a continuing awareness of the long-term effects of growth upon the physical form of the city." (page 40)

High-rise projects proposed, approved, or under construction in the South of Market area reflect current trends in downtown development. Cumulatively, new, taller construction predominates as older, smaller structures continue to be removed and vacant parcels are used for new construction. The project's tower would be viewed as a new element in the City's emerging form of taller buildings covering an increasing land area, including the Financial District and South of Market area (Figure 20, page 73). It would present another new high-rise structure to contrast with the older, low- and mid-rise groups of area buildings. The project would conform with the general shift of new office development into the South of Market area.

> City Pattern Policy 1: "Recognize and protect major views in the City with particular attention to those of open space and water." (page 10)

Views from below about the fourth floor in project area buildings are confined to short distances due to surrounding buildings of equal or greater height. Consequently, the proposed structure would not affect already blocked views below this level in surrounding buildings. However, at increasing heights in taller buildings, views outward would be partially obstructed up to the top of the proposed tower. The degree of view blockage would vary considerably with changes in elevation and observer location with respect to the project. Generally, the farther away from the project the observer would be located, the less view blockage would occur; closer to the project, the observer would experience greater view blockage. The project's tower would be expected to most directly affect

VIEW OF PROJECT FROM POTRERO HILL

FIGURE 20

SOURCE: EIP CORPORATION

views of the downtown from office buildings to the south and southwest. Occupants of the tower's upper floors would have views of downtown San Francisco, the South of Market area, and east toward the Bay and adjacent land areas.

D. SHADOW AND WIND

1. Shadow

Figures 21-25 on pages 76-80, indicate shadow patterns the proposed building would project during various portions of the year. The analysis is for periods when the sun would be lowest in the sky (December 21), through periods when the sun would be highest in the sky (June 21). The times of analysis are 10 a.m., noon, and 3 p.m., when the project would cast maximum and minimum shadows during the various seasons. Shadows are not shown on building rooftops. Generally, only those existing shadows in the immediate vicinity of the project that may overlap with project-generated shadows are shown. Shadows from the proposed project are only shown to the point where they are new shadows, not where they merge with existing shadows.

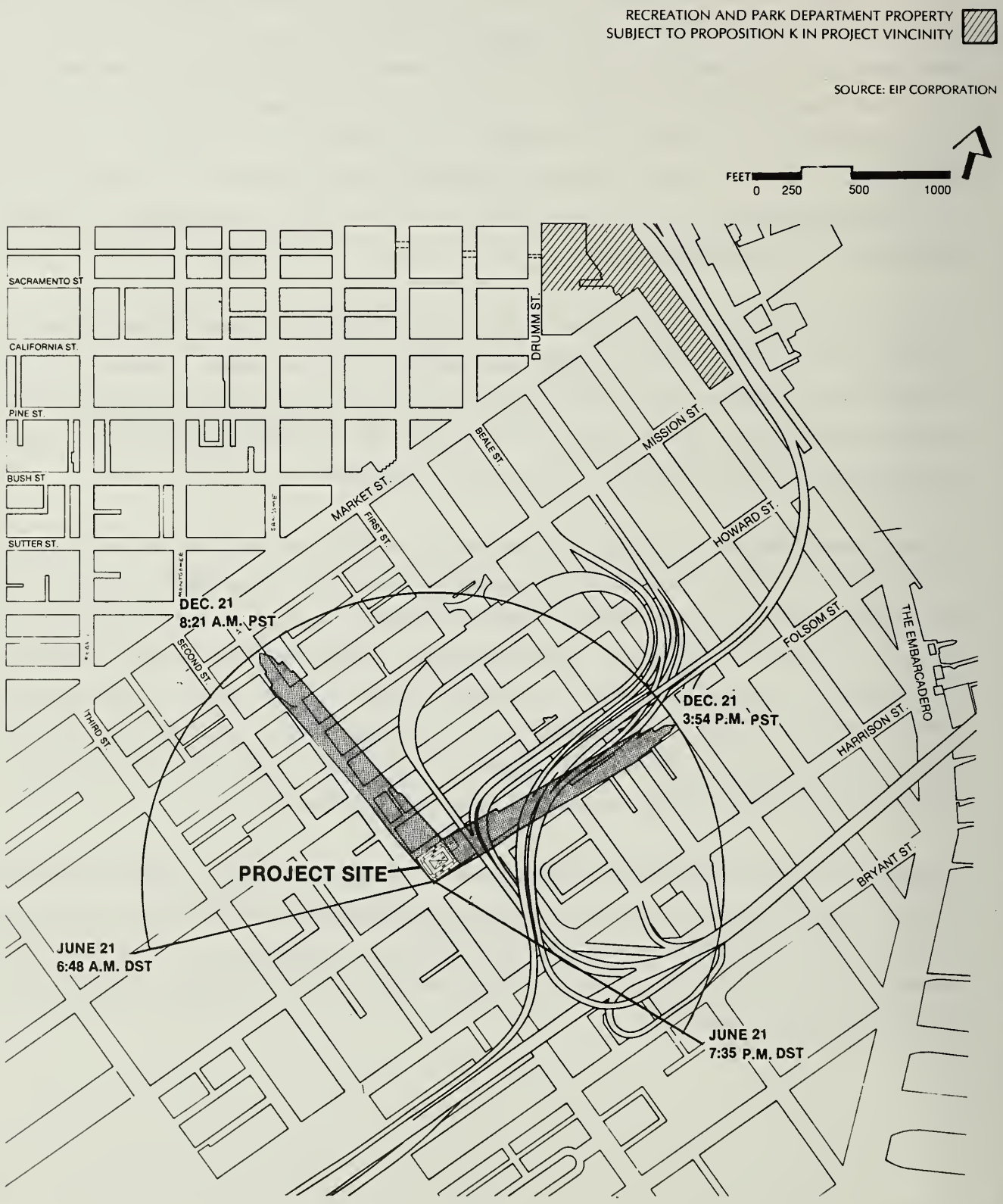
Many of the project's shadows would fall in areas shadowed by existing development or buildings under construction, and would not increase shadowed areas. However, overall project shadow impacts would vary according to the season and time of day. Sunlight would no longer reach the windows of structures near the project site that fall within project-induced shadows, as shown on the shadow diagrams.

Project shadows would most affect the pedestrian environment through the year between 10 a.m. and 3 p.m. At various times, shadows would be cast on portions of Second and Clementina Streets. To summarize the shadow diagrams, impacts on Second Street would occur in the morning from April through September. Clementina Street would be affected until 2:00 p.m. throughout the year. Minor shadow impacts would occur on Folsom Street after 3 p.m. from March 21 to June 21, and on Howard Street from approximately 8:00 a.m. to 10 a.m., Tehama Street from 12 noon to 1:00 p.m., and between the Embarcadero Freeway and East Bay Terminal ramps at 3 p.m. during December.

In response to the requirements of Proposition K, the shadow impact analysis considered potential project impacts on properties under the jurisdiction of the Recreation and Park Commission. In the project vicinity, shown in Figure 21 on page 76, , there is no existing property under the jurisdiction of the Recreation and Park Commission that would be affected by project shadows.

PROPOSITION K SHADOW ANALYSIS

FIGURE 21



SHADOW PATTERNS: MARCH 21 PST

FIGURE 22

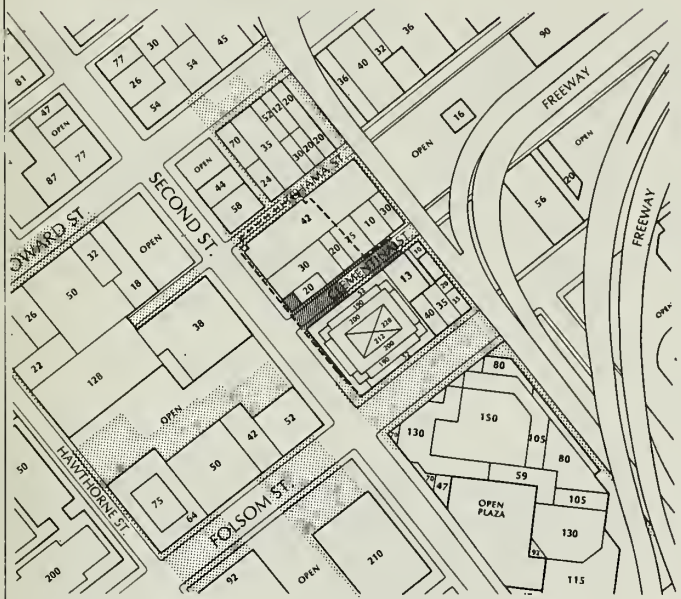
EXISTING SHADOWS

SHADOW FROM PROPOSED PROJECT

OUTLINE OF PROJECT SHADOW

SOURCE: EIP CORPORATION

FEET 0 100 200 400



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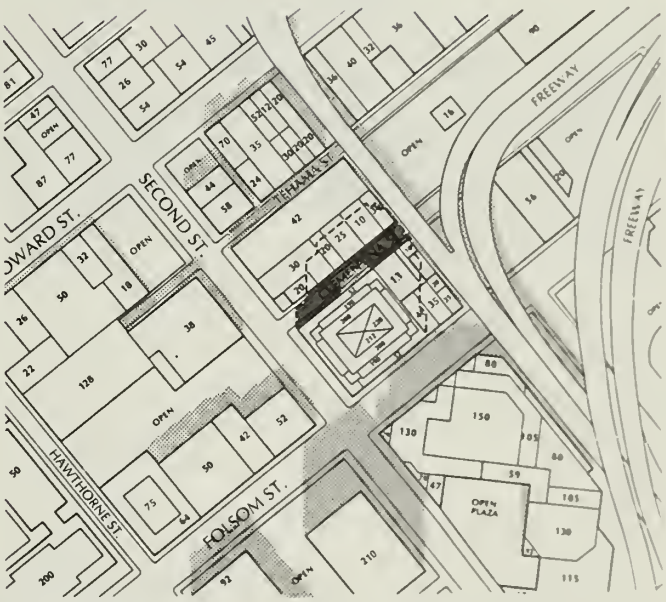
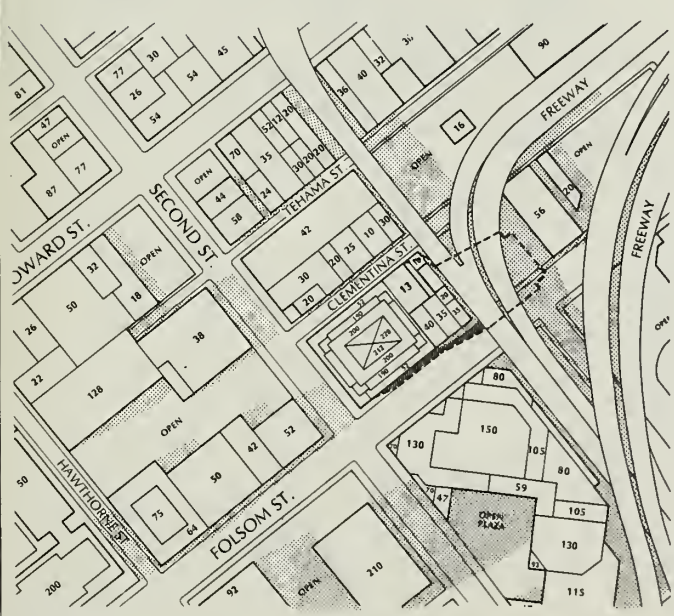


12:00 Noon



3:00 P.M.

SHADOW PATTERNS: JUNE 21 PDT

FIGURE 23

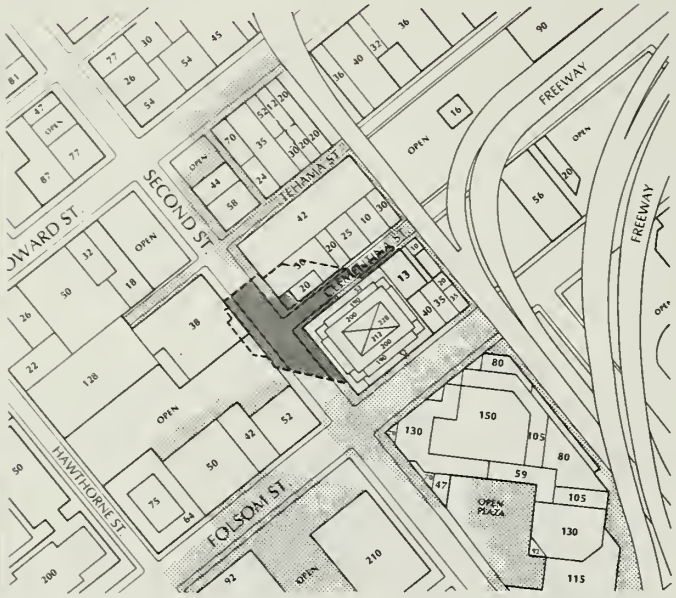
EXISTING SHADOWS

SHADOW FROM PROPOSED PROJECT

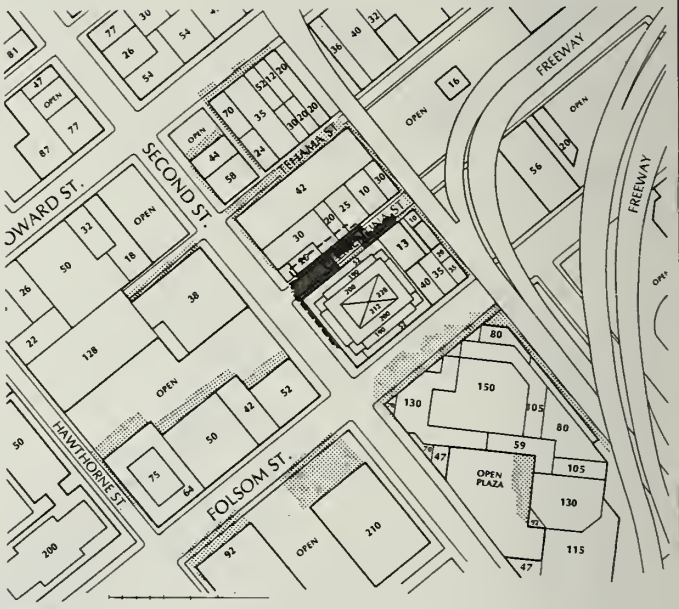
OUTLINE OF PROJECT SHADOW

SOURCE: EIP CORPORATION

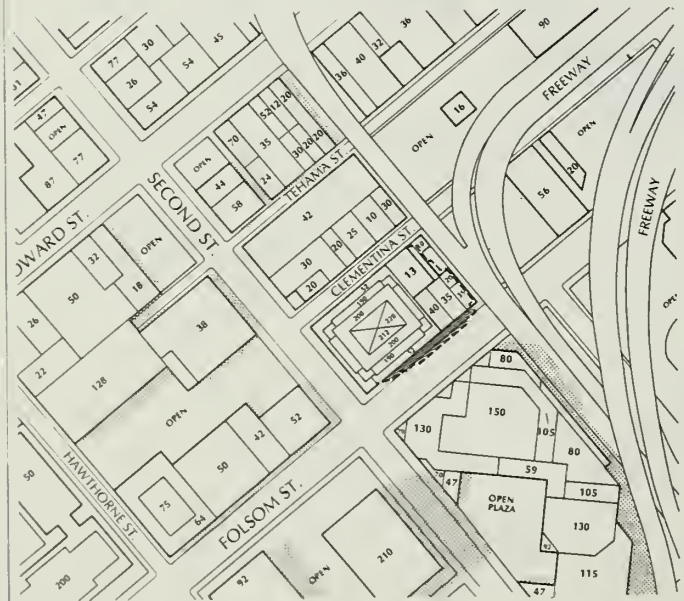
FEET 0 100 200 400



10:00 A.M.



12:00 Noon



3:00 P.M.

SHADOW PATTERNS: SEPTEMBER 21 PDT

FIGURE 24

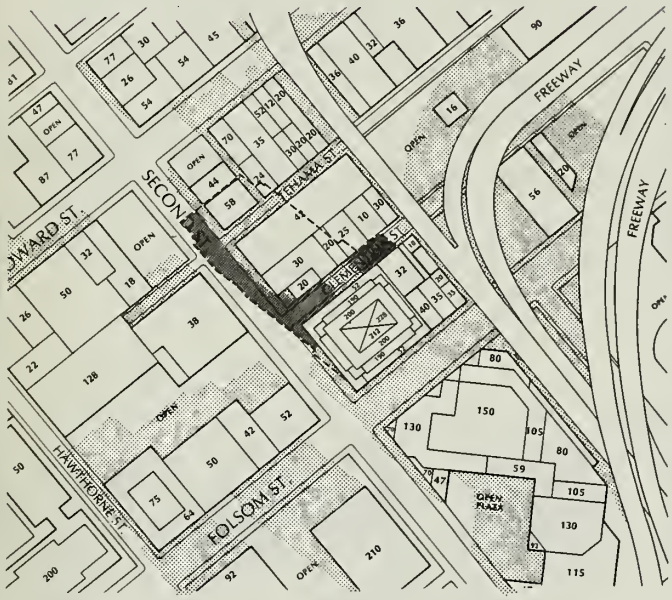
EXISTING SHADOWS

SHADOW FROM PROPOSED PROJECT

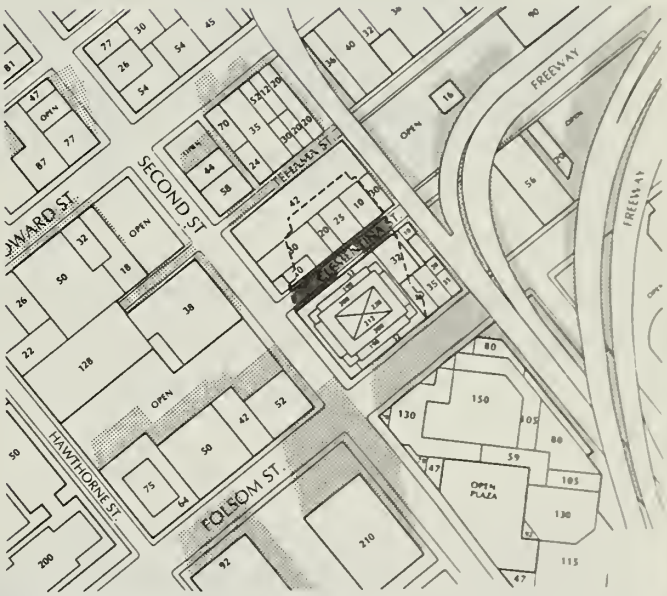
OUTLINE OF PROJECT SHADOW

SOURCE: EIP CORPORATION

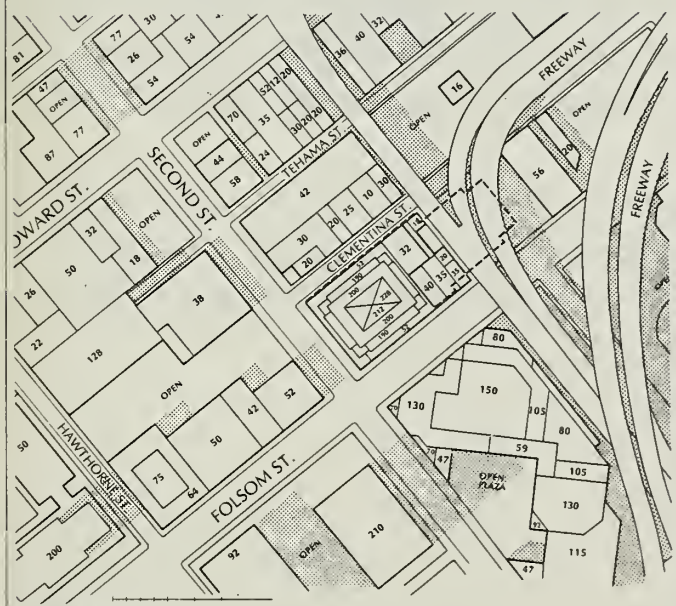
FEET 0 100 200 400



10:00 A.M.



12:00 Noon



3:00 P.M.

SHADOW PATTERNS: DECEMBER 21 PST

FIGURE 25

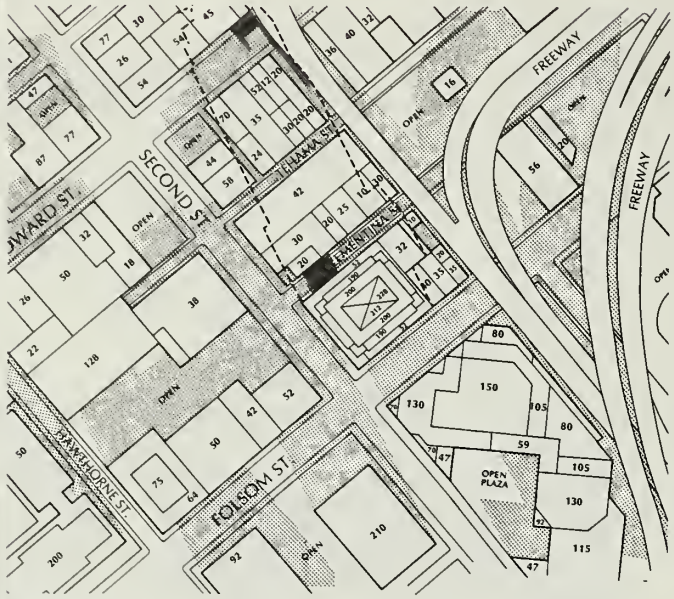
EXISTING SHADOWS

SHADOW FROM PROPOSED PROJECT

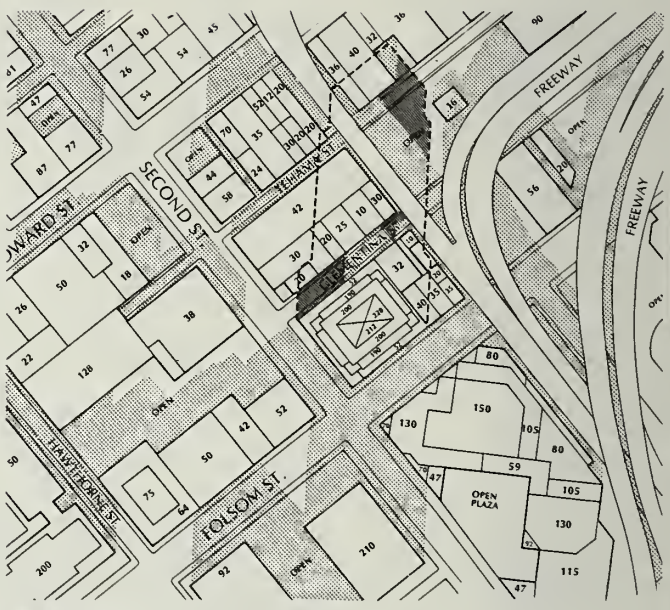
OUTLINE OF PROJECT SHADOW

SOURCE: EIP CORPORATION

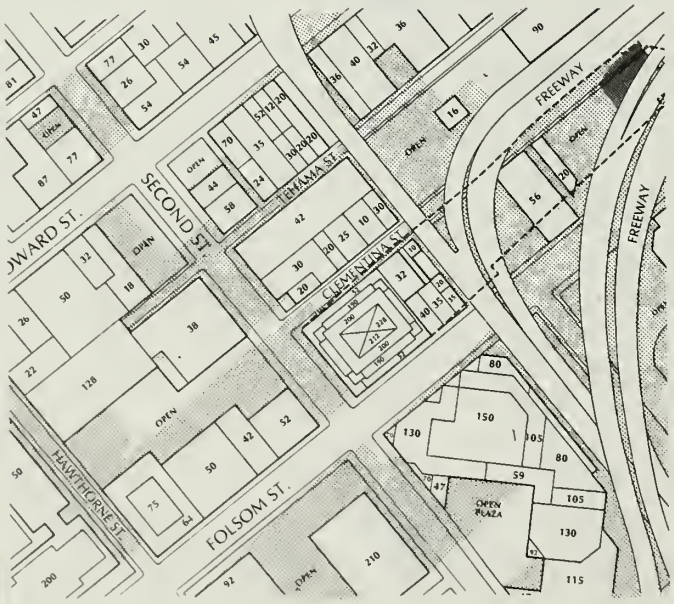
FEET 0 100 200 400



10:00 A.M.



12:00 Noon



2. Wind

Winds in San Francisco are generally strongest in the summer. Summer winds are from the northwest, west and southwest about 97% of the time, with a mean speed of 8 mph. Wind tunnel tests were conducted for these three most common wind directions (the Microclimate Impact Study appears as Appendix G, page A-55). Wind tunnel information was combined with wind records to predict average windspeeds at locations around and within the project site. The average windspeeds were compared to criteria for pedestrian discomfort and pedestrian hazard. Physical effects that cause physical discomfort are windblown dust, the blowing of hair and flapping of clothes, and interference with contact lenses. These effects occur with 11 mph windspeeds. Windspeeds of 35 mph can unbalance an elderly person and, therefore, represent a hazardous condition.

Northwest Winds

The proposed project would increase northwest winds along Clementina Street and the east side of Second Street by up to 2.8 mph. Winds would be generally reduced along Folsom Street. At no point would winds exceed the comfort or hazard criteria. The windspeed within the outdoor eating area would be 2.3 mph.

West Winds

The project would accelerate west winds along Clementina Street by up to 2.9 mph, and have no effect or reduce winds elsewhere. The comfort and hazard criteria would not be exceeded. Windspeed within the outdoor sitting area would be 4.7 mph.

Southwest Winds

Southwest windspeeds would be increased along adjacent sidewalks by up to 2.8 mph. The comfort or hazard criteria would not be exceeded. Within the outdoor eating area, winds are predicted to range from 2.3 to 6.6 mph.

Section 148 of the Interim Controls to implement the Downtown Plan establish an 11-mph criterion for walking areas and a 7-mph criterion for passive recreation areas. The project would meet these criteria.

3. Skyplane Analysis

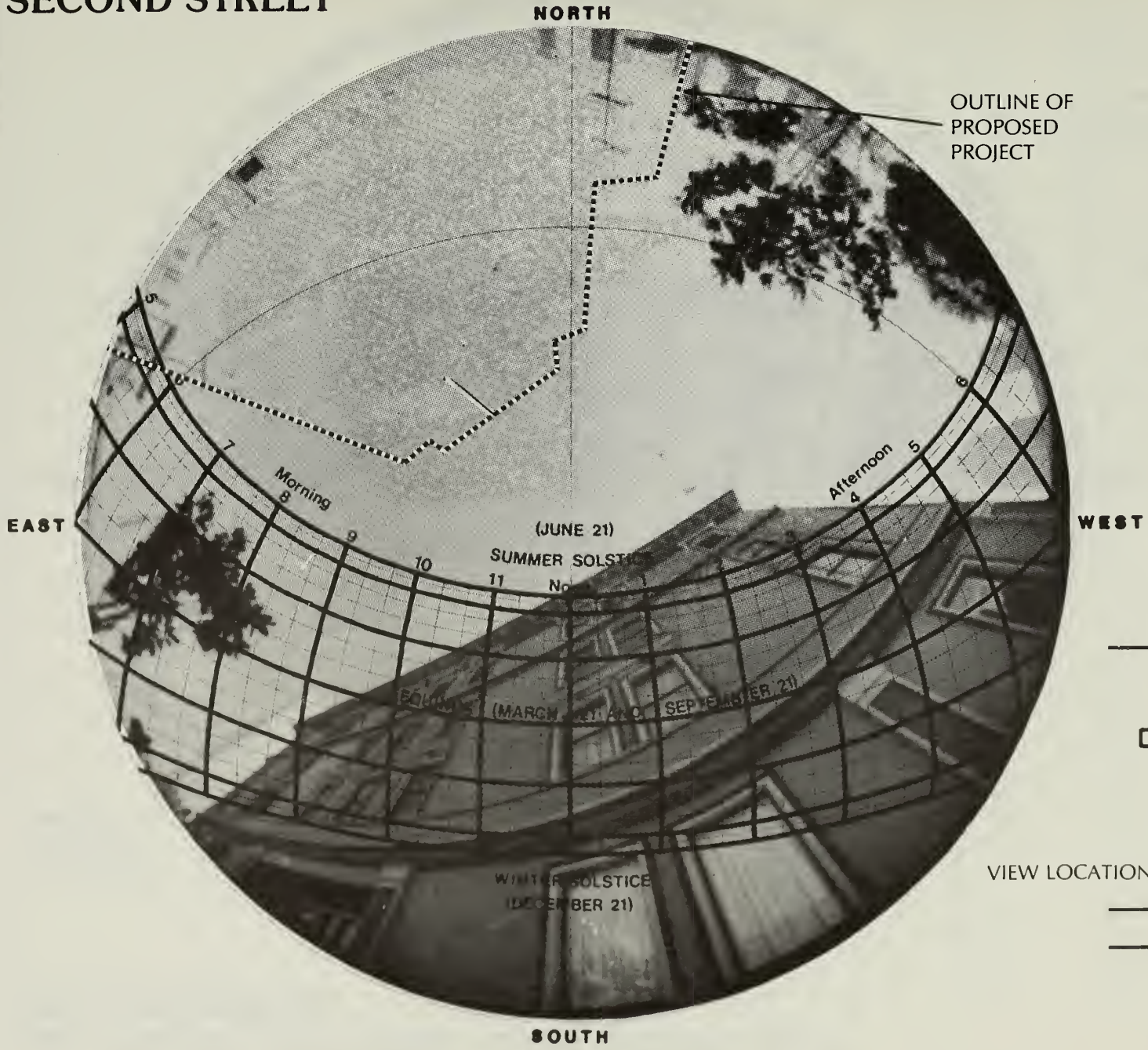
Figures 26 and 27, pages 83 and 84, show skyplane analysis for the sidewalk areas on the west side of Second Street and north side of Clementina Street opposite the site. The profile of the proposed project and the path of the sun across the sky are shown. While this method accurately quantifies the times of the day and year that a building will block sunlight, the distortion caused by using a fish-eye lens gives an inaccurate perception of the amount of sky blocked by buildings.

Figure 27 shows that morning sunlight at the corner of Clementina and Second Streets would be eliminated before 11 a.m. throughout the year. Afternoon sunlight would not be affected.

Figure 26 is the analysis for the location across Second Street from the project site. Sunlight reduction would not occur at any time of the year at this location.

SKY PLANE EXPOSURE FROM WEST SIDE OF SECOND STREET

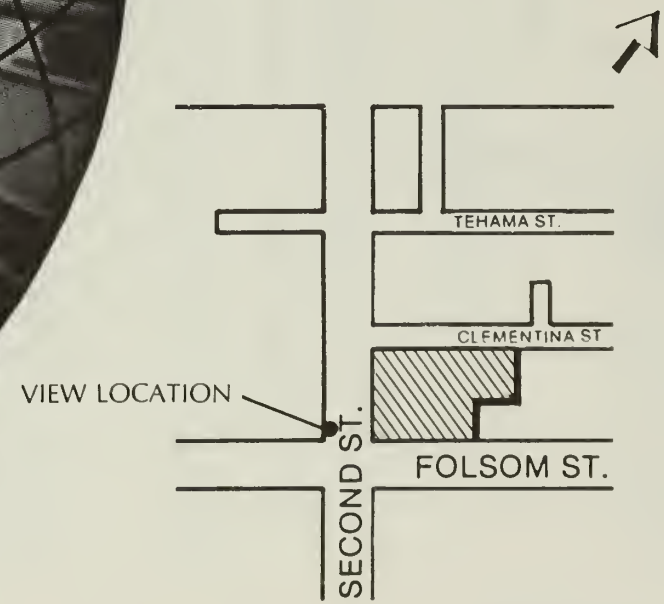
FIGURE 26



PROJECT SITE

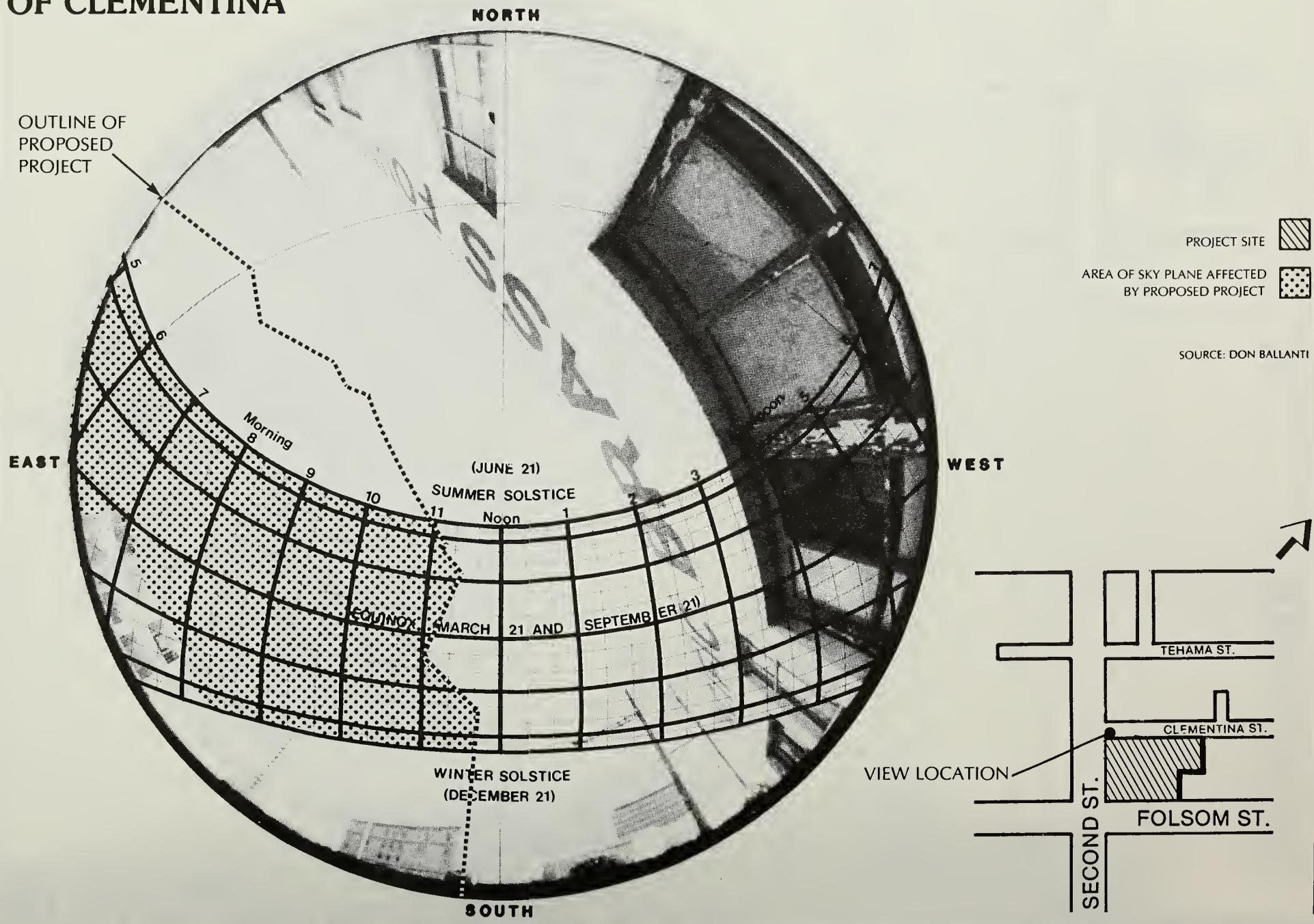
AREA OF SKY PLANE AFFECTED BY PROPOSED PROJECT

SOURCE: DON BALLANTI



SKY PLANE EXPOSURE FROM NORTH SIDE OF CLEMENTINA

FIGURE 27



E. ARCHITECTURAL AND HISTORIC RESOURCES

The following buildings would be demolished as part of the proposed project:

- 590 Folsom Street, formerly the Bothin Realty Building, Lot 27, rated "C" by Heritage,[1] a three-story concrete converted warehouse, 1921.
- 299 Second Street, Lot 29, rated "C" by Heritage, a two-story warehouse, 1921.

Neither building is included in the Department of City Planning's list of architecturally and/or historically significant buildings.

Downtown development has resulted in the total or partial demolition of 37 rated buildings between 1979 and 1982. See Appendix H, page A-63 for a complete list of these buildings. None was located in the project vicinity.

Proposed cumulative development in the project area would result in the demolition of two warehouses, one parking garage, eight office buildings, and a diner (see Figure 12, page 31). The current predominance of low-rise warehouse buildings converted to office and retail uses would be replaced with high-rise buildings.

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[1] A "C" (Contextual Importance) rating indicates that a building is distinguished by its scale, materials, compositional treatment, cornice and other features as noted on pages 12 and 13 of Splendid Survivors, Charles Hall Page & Associates, Inc. for Foundation for San Francisco Architectural Heritage, California Living Books, 1979.

F. TRANSPORTATION

TRAVEL DEMAND ANALYSIS

Project Travel Demand

Based on City guidelines and Caltrans trip generation research, the project travel has been calculated in Table 3, page 87 .[1,2] The project would generate a net increase of about 6,185 person trips daily: 630 during the p.m. peak hour and 1,075 during the peak two-hour period. A total of 514 outbound trips would occur during the peak hour and 851 trips during the peak two-hour period. The geographical and modal distribution of project travel (Table 4, page 88 has been based upon projected modal splits for the year 2000 contained in the EIR for the Downtown Plan (EE81.3).[3]

Modal assignments have been made on the basis of future modal splits for the year 2000 contained in the EIR for The Downtown Plan (EE81.3). The future modal splits have been applied to the project travel for the purpose of comparing project travel with future travel demand on the transportation system serving San Francisco. The modal splits used were derived from aggregate data for the C-3 District, the zoning district that contains the project site, and thus represent an average condition. The actual modal split for travel from the project may vary from the C-3 District average. However, because the travel demand forecasts used to derive the average modal split data include the travel from the project, application of the average modal split data to project travel appears to be sufficiently accurate for purposes of comparison.

Cumulative Travel Demand

Analysis of the transportation impacts of cumulative development in San Francisco EIRs has been the subject of considerable public discussion. To date, cumulative analysis has been conducted on the basis of based on a list of proposed development in the greater downtown area (see Appendix C, page A-32, for the March 10, 1984 list of these projects). The Downtown Plan EIR method is presents a refinement of the transportation analysis existing process that uses in which projections of employment growth, independent of a list of proposed projects, are used to project future travel.[4]

TABLE 3

NET NEW PROJECT PERSON TRIP GENERATION[1,2,3]

Land Use	Daily Trip Rate	Daily Trips	Peak-Period Trips (1-hr/2-hr) Total	Peak-Period Trips (1-hr/2-hr) Outbound
3,630 gross sq.ft. restaurant area	130/1,000[2]	472	38/76	16/32
10,000 gross sq.ft. retail area	150/1,000[1,2]	1,500	150/300	78/156
232,760 gross sq. ft. office area	18.1/1,000[3]	4,213	442/698	420/663
	NET TOTALS	6,185	630/1074	514/851

472	daily restaurant trips	=	19	work trips	+	453	non-work trips
1,500	daily retail trips	=	60	work trips	+	1,440	non-work trips
4,213	daily office trips	=	1,685	work trips	+	2,528	non-work trips
	NET TOTALS		1,764	work trips		4,421	non-work trips

[1] Institute of Transportation Engineers, Trip Generation, 1979, not paginated.

[2] Caltrans, Eleventh Progress Report on Trip Ends Generation, July 1976, pages 167, 168, 171 and 174.

[3] Department of City Planning, Guidelines for Environmental Review: Transportation Impacts, November 1984.

TABLE 4

DISTRIBUTION OF NET NEW PROJECT PERSON TRIPS
OUTBOUND DURING PM PEAK PERIOD

Location and Mode	Peak-Period Person Trips (1-hr/2-hr) Work	Non-Work	Total[1]
San Francisco			
Auto	63/101	3/5	66/106
Muni			
NE	10/25	7/12	17/37
NW	38/60	1/2	39/62
SW	33/65	2/3	35/69
SE	7/15	2/3	9/18
BART	11/20	1/3	12/22
Walk	17/34	81/155	98/189
Other	3/7	--/1	3/8
	182/326	97/185	279/511
East Bay			
Auto	34/39	2/4	36/43
BART	65/98	5/9	70/107
AC	23/37	---	23/37
Other	1/1	---	1/1
	122/176	7/12	129/189
Peninsula			
Auto	29/43	1/2	29/44
BART	13/15	1/2	14/16
Samtrans	7/13	---	7/13
SP	11/11	2/3	12/15
Other	1/5	---	1/5
	61/88	3/6	64/94
North Bay			
Auto	14/16	1/3	15/19
GGT Bus	20/30	1/1	21/31
GGT Ferry	4/4	---	4/4
Other	3/4	---	3/4
	41/54	2/4	43/58
	406/643	109/208	514/851

Source: Department of City Planning, Office of Environmental Review (OER), Downtown Plan, EIR EE81.3, certified October 18, 1984, on file at OER.

[1] Numbers may not total precisely because of rounding.

As discussed in Appendix J of the Downtown Plan EIR, transit service improvements have been assumed to be implemented by the year 2000. The service improvements assumed to occur correspond to the vehicle acquisition portions of the 5-Year Plans for Muni, AC Transit, SamTrans, CalTrain, and Golden Gate transit. In BART, both the vehicle acquisition program and the trackage improvements (Daly City tail track) were assumed to occur. These planned improvements would allow system capacities to keep pace with demand increases over time. The Downtown Plan EIR transportation analysis also assumes that regional auto use will continue to change over time in response to increasing levels of congestion on the bridges and freeways serving the City. The analysis projects a shift from single-occupant auto use (drive alone) for commuting to ridesharing (carpool, vanpool) and to transit use. The assumptions of continuing shift from auto to transit and ridesharing, most apparent in the 2000 modal splits, are made on the basis of long-term trends in transit use in the San Francisco commute corridors. Census data show that in the period 1970 to 1980, transit use for commuting increased. Similarly, Bay Bridge data show that ridesharing has been increasing over the last seven years. Thus, the shift to transit and ridesharing is well-established in San Francisco commute corridors.

The travel data presented in the Downtown Plan EIR transportation sections (and in this report) are projections of total demand on the transportation system serving San Francisco. The projections comprised of three components of travel demand. Two of the components were developed through an intricate travel modeling process for the C-3 District of San Francisco. These first two components of travel demand are C-3 District work (employee journey-to-work) travel and C-3 District non-work (all other) travel. The third component is non-C-3-District travel, which was forecast through an analysis of regional trends adjusted for the effect of development in the C-3 District. Non-C-3 travel is defined as travel that has neither an origin nor a destination in the C-3 District. Thus, non-C-3 travel includes travel to and from other parts of downtown and trips through San Francisco from other parts of the region. Employment projections are not specifically used in the non-C-3 travel analysis.

Although the C-3 District transportation modelling process used analytical techniques common to travel forecasting, several portions of the process are unique to the C-3 District. This uniqueness is the result of the development of two major data bases -- an inventory of existing land uses in the district and surveys of employees and employers in the district. The data developed from the surveys and the inventory have been used as the

basis for forecasts of development and employment growth in the C-3 District. Sections IV.B., Land Use and Real Estate Development; IV.C., Business and Employment; IV.D., Residence Patterns and Housing; and Appendices G, Land Use and Real Estate Analysis; H, Business and Employment Analysis; and I, Theoretical Discussion of Housing Market Effects/Methodology for Forecasting Residence Patterns, of the Downtown Plan EIR, which contain detailed information about methods used to project future employment in the C-3 District, are incorporated by reference into this report and summarized below and in the Land Use and the Residence Patterns and Housing sections of this EIR.

The cumulative analyses for forecasting future land use, employment, and residence patterns are described in the Downtown Plan EIR. Appendix sections therein describe the methodology, identify the factors considered, and identify the types and sources of data used. A concise description of the major components of the process of developing employment and land use development forecasts is presented in the flow charts in Figure H.1 and Figure G.1. The factors considered in forecasting residence patterns are identified in the diagram in Figure I.1.

The Downtown Plan EIR approach for forecasting future land use, employment, and residence patterns is based on a conceptual framework of the process of urban economic development. The analytical procedures incorporate a variety of types and sources of data and information concerning past, current, and likely future conditions regarding economic, real estate, demographic, and public-policy factors.

The employment projections in the Downtown Plan EIR for the year 2000 exceed the employment projected using the current list-based cumulative analysis, the list cannot take into account projects not yet proposed. The employment forecasts have been used as the basis for the travel demand modeling process. As described above, the C-3 District travel comprised two of the three components of total travel. Because of the use of the employment projections in the travel demand modeling process, the transportation forecasts for the year 2000 are independent of lists of cumulative development.

Through a complex calibration and validation process of comparing projections of travel demand modeled on the basis of the survey of C-3 District employees to actual travel from measurements made by state, city and regional agencies, work and non-work travel

demand from the C-3 District was modeled for the years 1984, 1990 and 2000. The modeling process comprises the following steps:

- Trip generation rates (empirical measures of total travel to and from a specific land use) were applied to employment forecasts by business activity (i.e., different rates were used for various land uses).
- The total travel from the C-3 District was distributed to seven Bay Area zones on the basis of projections of future employee residence patterns and origin-destination patterns for non-work travel.
- Trips to each of the seven regional zones were assigned to travel modes on the basis of modal splits (distribution of travel over the transportation modes, auto, transit, etc.) developed from the C-3 District surveys.

At this stage of the process, the model forecasts total travel from the C-3 District. To complete the process and to allow analysis of the effect of travel demand from C-3 District development on the transportation network, the non-C-3 travel demand was analyzed. The total travel demand was calculated by summing C-3 District work and non-work travel and non-C-3 travel at sub-regional measuring points (called screenlines) located at or just beyond the San Francisco county line (except for Muni and BART westbay service which were measured inside San Francisco, outside the downtown). The total travel demand was then compared to available service (capacity) at the screenlines and operating conditions (demand-to-capacity ratios) were analyzed assuming planned improvements. The results of those analyses are summarized later in this section.

For future years, the C-3 travel modeling process was modified to incorporate changes in travel patterns (modal split changes, different travel times), employee residence patterns and changes in land use patterns. The process incorporates the dynamic aspects of changing Bay Area travel patterns, rather than assuming a fixed, unchanging condition over time. An example of past changes in travel patterns can be seen in the amount of carpooling activity on the Bay Bridge. In 1977, peak average vehicle occupancy westbound on the bridge was 1.7 persons per vehicle. By 1983, in response to increasing congestion and increased travel and parking costs, peak average vehicle occupancy westbound increased to 2.1 persons per vehicle.[5]

The non-C-3 travel demand was forecast through the use of growth factors developed on the basis of historic trends in regional and sub-regional travel.[6] Historic growth rates

(factors) have been used to project increases only for non-C-3 District travel at the regional screenlines. No other use of historic growth rates has been made in the transportation analysis. Because of the individual and unique nature of each of the transportation screenlines, each growth rate is based on data for that location. Thus, the growth rates for freeways project growth in auto trips, while the growth rates for transit project growth in ridership.

Each of the historic growth rates inherently contains information about regional growth in travel patterns and thus incorporates not only growth from other parts of San Francisco, but from elsewhere in the region. As an example, the historic growth factor for trips southbound on US 101 includes travel that crosses the Bay Bridge or the Golden Gate Bridge as well as travel from San Francisco. However, the growth is projected as growth in auto travel and cannot be related directly to growth in employment in San Francisco.

The other process used to forecast cumulative transportation impacts starts with a list of cumulative office and retail development (net new office and retail space) proposed, approved or under construction in the greater downtown area. From that list, through the use of static employment densities for office and retail uses and established trip generation rates, forecasts of travel demand are made. The forecast travel is assigned to modes on the basis of modal split factors (which are assumed not to change over time). The Transportation Guidelines for Environmental Impact Review: Transportation Impacts (Department of City Planning, September 1983, hereinafter Transportation "Guidelines") describe the process and the data used to calculate transportation impacts from the list-based development.

The current list, shown in Appendix E, has about 19 million gross sq.ft of net new office space and about 0.9 million gross sq.ft. of net new retail space. On the basis of the Transportation Guidelines analysis, the list-based development would generate approximately 80,000 p.m. peak-period person trip-ends, of which about 49,000 would occur in the p.m. peak hour. Table 5, page 93 shows a comparison of the projections of travel demand from the list-based analysis and from the Downtown Plan EIR for the year 2000. While the list contains development both inside and outside the C-3 District, the Downtown Plan EIR makes specific projections only for C-3 District development and the travel components shown in Table 5 are for the C-3 District only; therefore, for purposes of comparision, travel from the C-3 component of the list (about 13 million gsf of net new

TABLE 5

COMPARISON OF LIST METHOD AND ECONOMIC FORECAST METHOD - OUTBOUND P.M. PEAK-HOUR CUMULATIVE TRAVEL DEMAND FOR THE C-3 DISTRICT

	March 10, 1984 Cum. Dev. List[1]	Downtown Plan (1984-2000)[2]	Alternative 1 (1984-2000)[2]	Alternative 2 (1984-2000)[2]	Alternative 3 (1984-2000)[2]	Alternative 4 (1984-2000)[2]	Alternative 5 (1984-2000)[2]
Work Person Trips	22,100	41,400	47,600	46,200	44,400	39,100	39,700
Other Person Trips	8,200	12,100	14,700	14,200	13,400	11,800	11,800
Total Person Trips	30,300	53,500	62,500	60,500	57,900	51,000	51,600
Muni							
Northeast	900	1,600	1,700	1,600	1,600	1,700	1,700
Northwest	3,700	1,800	2,000	1,900	1,800	1,800	1,800
Southwest	3,100	1,100	1,100	1,000	900	800	800
Southeast	600	1,100	1,000	1,000	1,000	600	700
BART							
East Bay	4,500	11,800	13,300	13,100	12,700	11,300	11,300
Peninsula	1,900	2,400	2,800	2,700	2,600	2,300	2,300
AC Transit	1,700	200	600	500	300	-100	-100
GGT							
Bus	1,100	3,200	3,700	3,600	3,500	2,700	3,100
Ferry	300	800	800	800	800	800	800
SamTrans	300	1,200	1,300	1,300	1,200	1,000	1,100
SPRR/CalTrain	500	1,800	2,000	1,900	1,800	1,700	1,700
Regional Auto							
Golden Gate Bridge	370	410	630	590	540	390	370
Bay Bridge	960	1,250	1,550	1,540	1,510	1,060	1,110
U.S. 101	420	470	650	620	590	400	400
Interstate 280	420	470	650	620	590	400	400

[1] Travel from only those listed projects that are located inside the C-3 District. The list also contains development located in the greater downtown area outside the C-3 District; travel from those projects has been included in the list-based travel shown in the remainder of this section.

[2] Travel from the C-3 District only. The analysis used in the Downtown Plan DEIR assumes regional travel growth not shown in the above data but discussed in the remainder of this section.

[3] Vehicle trip-ends; calculations made on the basis of 2.7 persons per carpool and 12 persons per vanpool. Person tri-ends on transit cannot be added to vehicle trip-ends to obtain total person trip ends because of the varying numbers of persons per vehicle.

Source: Environmental Science Associates, Inc.

office space and 0.4 million gsf of retail space) has been analyzed for comparison with the projections from the Downtown Plan EIR for Alternatives 1 to 5 and the Downtown Plan.

As shown in Table 5, travel demand from the Alternatives in the Downtown Plan EIR ranges from Alternative 1 (about 17% higher than the Downtown Plan) to Alternative 4 (about 5% lower than the Plan). Although there is a range, the spread is within the level of accuracy of the transportation analysis and thus, statistically, the transportation impacts of the Alternatives are equivalent to those of the Downtown Plan. Several anomalies are apparent in the data shown in Table 5. The major anomaly is that, while the C-3 component of the list would generate about half as much travel as do the Downtown Plan and the five Alternatives, the list-based analysis yields travel demands within San Francisco (inside and outside the C-3-District) that exceed those generated by the Downtown Plan and the Alternatives. An explanation of this major anomaly is presented in the following paragraphs.

The difference in total travel results in part from the different time frames of the list and the Downtown Plan EIR. The Downtown Plan EIR established 1984 as the baseline year and 1990 and 2000 as target study years. Estimates of growth were made on the basis of projections for each of the target years for the range of alternatives. In contrast, the projects included on the Cumulative List span a period from 1984 to sometime in the early or mid-1990's, when completion of all projects on the list or a similar amount of square footage would be expected.[7] This is one of the major reasons why results of impact analyses using these two forecasting methods are not directly comparable.

The variations in travel by trip purpose (work, other) and by travel mode (as shown in Table 5) between the list-based method and the Downtown Plan EIR method can be explained by differences in the methodologies and data bases used to forecast the travel demand. The list-based analysis employs single-use trip generation data to estimate total travel through the process of adding together the trip generation estimates from all the individual buildings on the list. These single-use trip generation rates do not incorporate any discounting factors to account for trips going from one building to another within the Downtown. Studies for the Downtown Plan EIR have confirmed that there is considerable

travel between land uses in the downtown area. Thus, the list-based analysis adds each trip as if it were a new trip in or out of the downtown and overestimates the total number of peak-hour trips.

The Downtown Plan EIR travel demand model has refined the trip generation process by incorporating discounting factors that adjust the trip generation rates to give travel to and from the C-3 District as a whole; it does not include trips internal to the C-3 District. Although the Downtown Plan EIR process predicts proportionately more work travel than does the list-based analysis, observations show that the Downtown Plan EIR forecasts more closely resemble actual travel demand that would result from downtown development.

The differences in distribution of travel among modes (shown in Table 5) are the products of refinements in the regional distribution and modal split analyses in the Downtown Plan EIR process. The list-based analysis assumes a static (unchanging over time) regional distribution and static modal splits. The Downtown Plan EIR analysis has incorporated changes in both the regional trip distribution (reflecting projected availability of housing) and the modal splits (reflecting projected availability of roadway and transit capacity in the future).

The list-based analysis shows more San Francisco travel (as shown by larger Muni numbers for the list-based analysis in Table 5) than does the Downtown Plan EIR analysis, because the Downtown Plan EIR analysis projects a declining availability of housing in the City. Thus, as the downtown work force increases, the percentage of workers living in San Francisco would decrease. The list-based analysis assumes that the percentage of workers living in San Francisco would remain constant over time and thus overestimates the number of future employees living in the City and underestimates the number of regional commuters.

Other differences in travel among the modes, particularly regional auto and AC Transit, are the result of the refined modal split process used in the Downtown Plan EIR. As the list-based analysis assumes that modal split remains constant over time, the list-based analysis is insensitive to the abilities of transit agencies and regional roadway systems to serve future demand. The Downtown Plan EIR analysis has assumed that the modal split would change over time in response to the increasing levels of congestion at the regional

screenlines (described in the Downtown Plan EIR). Thus, because the Bay Bridge is at or near capacity in the p.m. peak hour eastbound, the Downtown Plan EIR modal split projects a proportionately lower increase in auto demand to the East Bay than does the list-based analysis. Similarly, for AC Transit the Downtown Plan EIR recognizes that current regional transit policy dictates no increases in AC Transit transbay service and thus, the ability of AC Transit to carry additional riders transbay will be restricted in the future. Use of this changing modal split is a refinement that allows the travel model to more accurately forecast travel demand and thus, the Downtown Plan EIR results represent a more accurate level of projection than has been possible using methods and data available to date.

Various other factors cause differences in the travel demand projections between the two approaches. The Downtown Plan EIR and the Consultant's Report on Downtown Growth Management Alternatives (Environmental Science Associates, 1983) contain extensive discussions of the analyses and data used to forecast employment, land use (see Sections cited above) and transportation demand (see Section IV.E and Appendix J of those reports).

TRANSIT

The transit agencies serving downtown San Francisco carry approximately 60% of the peak-period employee work travel, as well as about 20% of the peak-period other travel. P.M. peak-hour and peak-period loadings on the local and regional transit routes were found to be near capacity for some of the routes in 1984 (see Table 6, page 97). The values shown in Table 6 are sums over the peak hour and the two-hour peak period. Within the peak hour, there would be periods of time when the loading ratios would be higher than those shown for the hour (peak-of-the-peak conditions). Individual transit vehicle loadings vary on a day-to-day basis because of fluctuations in ridership (demand) and because of variations in operating conditions caused by traffic congestion, equipment availability, and/or system breakdowns. Photographic examples of p.m. peak-hour loadings on Muni vehicles are shown in Appendix B, Figures B-1 to B-2).

The 1981/82 transit ridership and loading data used in the Downtown Plan EIR analysis are summations of actual counts of individual transit lines for that period in time. Calculations are made on the basis of observed operating conditions, as opposed to

TABLE 6

OUTBOUND REGIONAL TRANSIT DEMAND AND LEVEL OF SERVICE

Transit Agency	1984 Demand	1984 P/S[1]	1984 LOS[2]	DOWNTOWN PLAN (2000) Demand	DOWNTOWN PLAN (2000) P/S	DOWNTOWN PLAN (2000) LOS	Project Percent[3]	1984 + CUMULATIVE LIST Rounded Demand	1984 + CUMULATIVE LIST P/S	1984 + CUMULATIVE LIST LOS	Project Percent[3]
P.M. Peak Hour											
Muni											
Northeast	7,100	1.16	D	8,800	1.05	D	0.2	8,700	1.04	D	0.2
Northwest	8,200	1.26	E	10,100	1.25	D	0.4	12,900	1.59	F	0.3
Southwest	13,500	1.45	E	16,600	1.42	E	0.2	17,500	1.50	E	0.2
Southeast	5,300	1.06	D	7,400	1.01	D	0.1	6,400	0.88	C	0.1
BART											
Transbay	16,100	1.53	F	27,900	1.42	E	0.3	21,900	1.12	D	0.3
Westbay	7,700	1.10	D	10,100	1.06	D	0.1	10,200	1.07	D	0.1
AC Transit	9,100	0.94	C	10,500	1.08	D	0.2	11,300	1.16	D	0.2
GGT Bus	5,300	1.00	C	8,500	0.91	C	0.2	6,800	0.73	B	0.3
GGT Ferry	800	0.57	B	1,500	0.38	A	0.3	1,100	0.28	A	0.4
Tiburon Ferry	200	0.40	A	300	0.60	B	--	200	0.40	A	--
SamTrans	1,900	1.12	D	3,100	1.19	D	0.2	2,300	0.88	C	0.3
CalTrain (SPRR)	3,100	0.61	B	4,900	0.79	C	0.2	3,800	0.61	B	0.3

TABLE 6 (continued)

Transit Agency	1984 Demand	1984 P/S[1]	1984 LOS[2]	DOWNTOWN PLAN (2000) Demand	DOWNTOWN PLAN (2000) P/S	DOWNTOWN PLAN (2000) LOS	DOWNTOWN PLAN (2000) Project Percent[3]	1984 + CUMULATIVE LIST Rounded Demand	1984 + CUMULATIVE LIST P/S	1984 + CUMULATIVE LIST LOS	1984 + CUMULATIVE LIST Project Percent[3]
P.M. Peak period											
Muni											
Northeast	12,600	1.06	D	15,500	0.95	C	0.2	15,200	0.93	C	0.2
Northwest	13,100	1.13	D	15,300	1.05	D	0.4	20,600	1.41	E	0.3
Southwest	23,300	1.31	E	28,700	1.29	E	0.2	29,800	1.34	E	0.2
Southeast	9,100	1.00	C	12,100	0.88	C	0.1	11,000	0.80	C	0.2
BART											
Transbay	25,800	1.54	F	44,100	1.40	E	0.2	35,200	1.12	D	0.3
Westbay	11,300	0.80	C	14,600	0.77	C	0.1	15,400	0.81	C	0.1
AC Transit	14,000	0.95	C	17,000	1.16	D	0.2	17,500	1.19	D	0.2
GGT Bus	7,600	0.90	C	12,200	0.81	C	0.3	10,000	0.67	B	0.3
GGT Ferry	1,000	0.56	B	1,700	0.33	A	0.2	1,500	0.29	A	0.3
Tiburon Ferry	300	0.60	B	500	1.00	C	--	400	0.80	C	--
SamTrans	2,900	1.12	D	4,500	1.15	D	0.3	3,600	0.92	C	0.4
CalTrain (SPRR)	4,500	0.68	B	6,200	0.77	C	0.2	5,500	0.68	B	0.3

[1]Passengers per Seat is the ratio of total demand to seated capacity.

[2]Level of Service is scale ranging from A to F that relates P/S ratios to passenger loading conditions on transit vehicles. (See Table B-2, Appendix B.)

[3]The percent of demand generated by the project.

Source: Environmental Science Associates, Inc.

scheduled operations. Muni supplied the data for the Downtown Plan EIR analysis from its ongoing program of ridership checks. (The data supplied and collected for each transit agency are in the supporting documentation for the Downtown Plan EIR, on file with the Office of Environmental Review, 450 McAllister St., Fifth Floor, San Francisco, CA.) Muni was involved in the process of verifying the transportation analysis for the Downtown Plan EIR and as a result of that process, approved of the use of Muni data and the projections derived from that data.

The Level of Service concept, similar to that developed for highway operations, has been applied to both bus transit and rail transit. Passengers per seat (i.e., total passengers divided by the number of seats) has been used as the measure of effectiveness to define the various level of service ranges. Table B-3, Appendix B, shows the relationship between Level of Service and passengers-per-seat (p/s) ratios for bus transit systems.

During the p.m. peak hour in 1984, all of the transit agencies were found to be operating in Level of Service D or better, with the exception of BART Transbay where conditions were found to be at Level of Service F, and Muni in the Northwest and Southwest corridors, where operations were found to be in Level E. Although BART is a rail transit service, its cars have a unique seating configuration. The ratio of total capacity to seated capacity for a BART car (about 1.5) is equivalent to the ratio for bus transit; thus the bus transit Level of Service scale is applicable to BART. Level of Service F ("crush" or "jammed" loadings) on BART is in the range of 1.5 to 1.8 passengers per seat. Because BART operates on a centrally controlled system, the "crush" loadings would not increase passenger loading times (which causes deterioration of service) as would be the case on a bus transit system rather, the effects of "crush" loadings on BART would be reflected in increased passenger discomfort.

The rail transit Level of Service scale is based on typical lightrail transit systems for which total capacity is about 2.0 to 2.2 times seated capacity. The rail transit Level of Service scale would be applicable to Muni Metro, which provides about 50% of the seated capacity to the Southwest corridor. Because Metro vehicles can accommodate higher loadings (a ratio of 2.0 passengers per seat) than buses or trolleys (a 1.5 ratio), the Level of Service would be somewhat better than shown in Table 6. An exact estimate of Metro loadings is not possible without analysis of the Metro service separate from the remainder

of Muni service to the Southwest; such analysis would be beyond the ability of the travel demand analysis to predict accurately over time, as discussed in the following paragraphs.

With regard to the Muni data presented in Table 6 the Muni routes have been aggregated on a corridor basis and thus include two-directional travel on some routes that serve the Northeast and Southeast corridors. The Muni numbers cannot be added over the corridors to get a total for the system. Neither can capacity be shifted from one corridor to another. For instance, capacity in the Northeast corridor depends, in large part, on capacity that serves the Southeast portion of the City. The 15, 19, 30X, 30AX, 30BX, 32, and 47 lines pass through the downtown in two directions. Service on the above lines is interdependent. Thus, increases or decreases in capacity on one of the above lines directly affects service in the opposite direction. Service to the Northeast and Northwest corridors is also interconnected, as lines serving the Northwest must pass through the Northeast corridor and, thus, serve both areas. Muni ridership and capacity have been apportioned between both areas.

Passengers-per-seat ratios are only one measure of adequacy of service. The constraints of operating on heavily used streets in and around the downtown cause transit-vehicle bunching, loss of running time and missed schedules, all of which reduce service, reliability, and ultimately, capacity. In some respects, this would not be evident from simple quantitative analysis. In addition to these inefficiencies inherent within the transportation system, there are other factors which would affect overall transit capacities. These include variability in daily and seasonal ridership for which an absolute capacity must be available, as well as transit riders who remain uncounted because their transit trips both start and end the screenlines used in this analysis. Daily fluctuations in fleet availability also affect system capacity.

Further, policy considerations dictate minimum operating conditions on certain lines; minimum headways that have been established to maintain transit access to areas served by those lines are not warranted on the basis of ridership alone. When averaged together, the ridership data from these lines may slightly distort overall ridership conditions.

P.M. peak-period conditions on transit in 1984 are equivalent to or better than peak-hour conditions. In some cases, where demand remains at peak-hour levels during the two-hour period, the passengers-per-seat ratios in the two-hour period are higher than in the one-

hour period. This anomaly is the result of transit agencies' providing express (or additional) service during the peak hour, but not during the entire peak period. An example of this type of operation may be seen on BART, where three extra trains operate in transbay service in the peak hour but not in the rest of the peak period. Another factor involved is the distribution of demand (ridership) at uniformly high levels over the peak period.

Both transit demand and capacity have been assumed to increase during the period 1984 and 2000. The discussions of transit capacity increases for the agencies are based on the Five-Year Plans and Capital Improvement Plans of the various transit agencies; they appear in Appendix J of the Downtown Plan EIR, pages J.25-J.26. This material, which is discussed below and summarized in Table 6, is incorporated by reference. The future capacities were developed by applying percentage increases, expected in the future, to observed existing capacity. Thus, to the extent that the existing conditions contain inherent capacity reduction for missed runs, the future capacity projections have taken into account the inability of the transit systems to provide 100% of scheduled capacity. As noted above, the Muni analysis calculates capacity on the basis of all runs leaving the C-3 District in the p.m. peak. For all of the transit analyses, only peak-direction vehicles are counted.

Future transit demand and loadings for the Downtown Plan in the year 2000 and for 1984-plus-the-Cumulative-List are shown in Table 6 for both the peak hour and the peak period. The transit demand from the project would range between 0.1% and 0.4% of the total peak-hour travel demand on the individual transit carriers in the year 2000.

Peak-hour transit demand on Muni in the year 2000 would increase about 25% over 1984 levels in the Northeast, Northwest and Southwest corridors. Muni demand in the Southeast corridor would increase about 40% between 1984 and 2000. Peak-hour demand on the other agencies would increase between 30% and 70% between 1984 and 2000.

Peak-period increases in demand would be between 15% and 70% during the 1984 to 2000 period. Overall peak-period travel would be expected to increase about 30% between 1984 and 2000. Peak period demand generated by the project would range from 0.1 to 0.4% of the total peak period travel demand. Peak-hour and peak-period passenger loadings would be worse than in 1984, although most systems would operate in acceptable

conditions (Level of Service D or better). However, BART Transbay and Muni to the Southwest would be in Level of Service E during the peak hour and the peak period.

Although the data in Table 6, is calculated on the basis of projections for the Downtown Plan, similar conditions would be expected under the five Alternatives in the Downtown Plan EIR. As shown in Table 5, total transit demand under Alternative 1 would be about 12% higher than under the Downtown Plan while transit demand from Alternative 4 would be about 9% lower than the Plan. As noted previously, these differences would not be statistically significant. In terms of Level of Service, the Downtown Plan would be equivalent to the five Alternatives.

It is important to note that the Five-Year Plan improvements for the transit systems are designed both to provide for future demand increases, and to improve service levels from existing conditions. For new vehicle to expand system capacity rather than represent replacement on a one-to-one basis, operating revenues would similarly need to be increased. During the year 2000 peak hour, Muni service to the Southwest and BART service Transbay would exceed the desirable passengers per seat ratios of 1.25 and 1.50, respectively.[8] Although the transit demand in the two corridors in excess of the desirable loadings would be able to be accommodated under crowded conditions and thus would not be excess demand; (that is, not beyond capacity), demand in excess of the desirable loadings would mean that additional transit service over that assumed to occur by 2000 would need to be provided to allow transit operations in the two corridors to meet the goals set by Muni and BART. To meet the goal of 1.25 passengers per seat in the peak hour, Muni would have to increase service by about 14% in the Southwest corridor over the amount of service assumed to occur in 2000. To meet the goal of 1.50 passengers per seat, BART would have to provide a transbay service increase of 14% over the amount of service assumed to occur by 2000.

If transit service were not increased beyond the amounts assumed to occur by the year 2000 in the Downtown Plan EIR, transit operations (in terms of passenger comfort) would be slightly better than 1984 conditions. Peak-hour and peak-period passengers-per-seat ratios would be lower than 1984 ratios even though service (in some corridors) has been assumed to increase as much as 80% between 1984 and 2000.

If the Downtown Plan's Goals regarding increased transit use were achieved, and the proposals in the Plan regarding transit service improvements were to be fully developed and in place, the impacts on transit agencies would be less than described above. If the Goals were achieved, transit agencies would experience greater levels of demand than under this analysis but overall passenger loadings would be lower (and within desirable levels) because of increased transit service availability that would come about if the proposals stated in the Plan are developed.

Shown in Table 6 is an independent analysis of the conditions that would result from adding travel from the Cumulative List to the 1984 base data, as is specified in the Transportation Guidelines. As noted above, the estimates calculated by adding the travel from the cumulative list to the 1984 base data as note specifically comparable to those from the Downtown Plan EIR method. The project travel would represent about 0.2% of the total travel on transit in the 1984-plus-the-Cumulative-List condition. As noted above, the List-based analysis overestimates the component of travel from San Francisco, as is shown in Table 6 by higher P/S ratios for Muni in the Northwest and Southwest corridors and lower P/S ratios for BART transbay, SamTrans, and CalTrain than under the Downtown Plan EIR method. Under the 1984-plus-the-Cumulative-List conditions, Muni would not meet its service goals in the Northwest and Southwest corridors; this would require additional service increases of 27% and 20%, respectively, to meet Muni's goal of 1.25 passengers per seat in the peak hour. The other transit agencies would meet their service goals under these conditions.

Transit Costs

The sponsor would be required to pay a one-time Transit Impact Fee to finance the increased cost of Muni services necessitated by the project, at the rate of $5 per gross square foot of new construction. Based on the $5 rate, the project would yield about $1,163,800.[9]

Cost increases due to increased patronage would be expected for Muni, SamTrans, BART and Golden Gate Transit. The City's general fund provides for a subsidy to the Municipal Railway's operating budget. The subsidy covers the difference between Muni's costs and the revenues that Muni receives from fares and from federal and state governments and represents the cost of Muni to the City. This subsidy amounted to about 10% of total

General Fund revenues in the 1984-85 budget; if this share were maintained, the proposed project would contribute approximately $20,650 annually to Muni through increased net revenues to the General Fund after occupancy. The net marginal cost (or increase in the deficit for Muni operations) per peak-hour ride was $0.50 in 1984. The proposed project would generate about 186 peak-period outbound trips which could generate an annual cost to Muni of approximately $46,870.[10] The extent to which this marginal cost increase cost would be met by the general fund allocation to Muni is not known. However, it appears that the increase in general fund allocations generated by the proposed project would offset a portion or all of the about $46,870 peak-period marginal costs to Muni. State and federal funds to Muni are decreasing and the City is reviewing other options for increased revenues.

It is estimated that 520 daily trips on BART would be generated by the proposed project employees. The deficit per rider for BART is estimated at $1.06. Using this rate, the proposed project would generate a deficit of about $138,900.[11] However, additional property tax and sales tax revenues generated by the project for BART would reduce the deficit to $108,600.

PEDESTRIAN MOVEMENTS

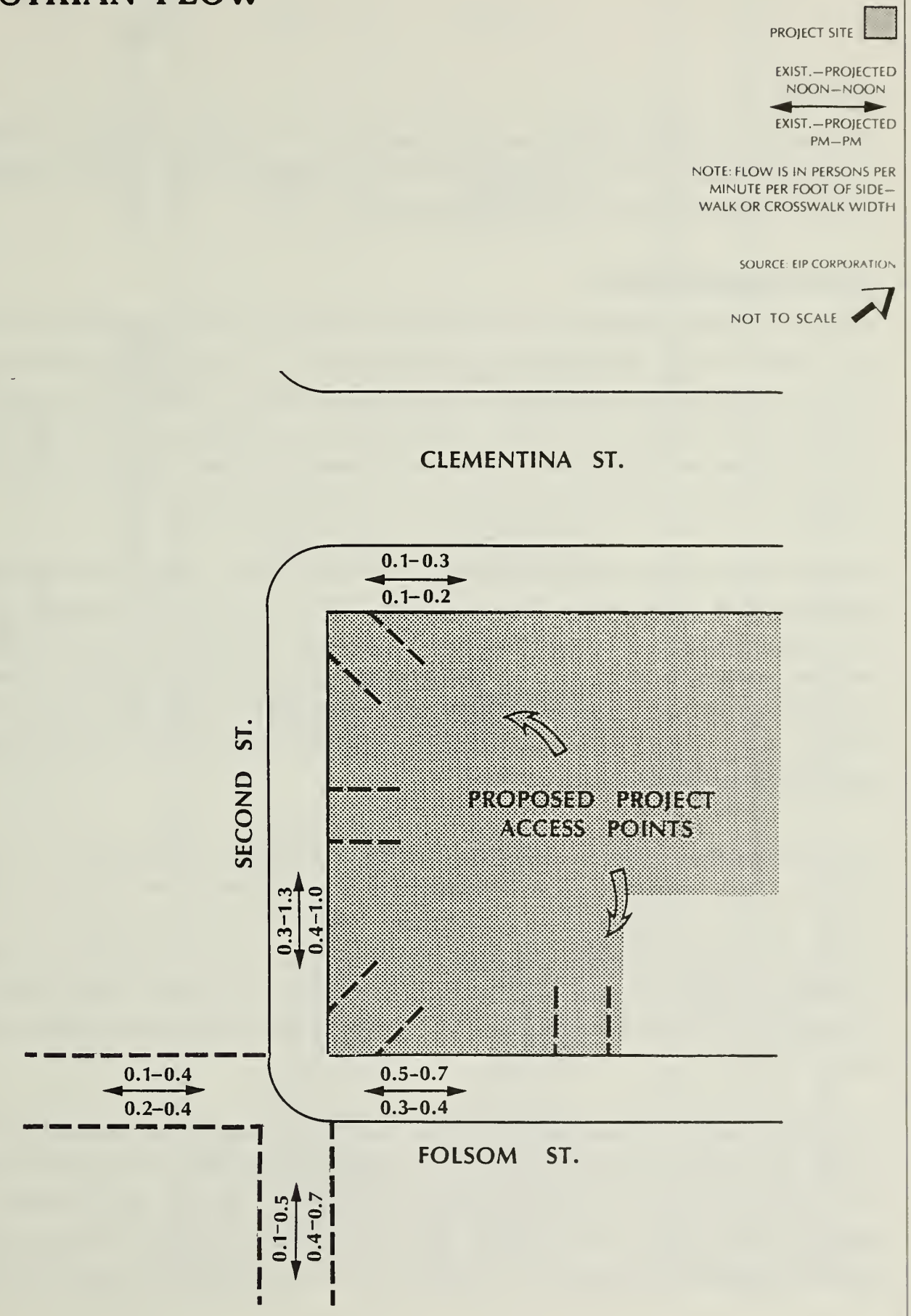
6. Pedestrian Flows

The project's primary entrance, would be along the Second Street frontage. The project would generate about 500 (net new) p.m. peak-hour pedestrian trips and about 745 (net new) pedestrian trips during the mid-day peak hour (within the 11:00 a.m. to 1:00 p.m. period).

Existing and projected pedestrian flow conditions have been identified for sidewalks and crosswalks adjacent to the project site (see Figure 28, page 105).[12] (For a definition of pedestrian flow regimes, see Appendix B, Table B-1, page A-23 and page A-24). Existing flows are "open" with the exception of "unimpeded" midday flows along the site's Folsom Street sidewalk. As shown in Figure 28 (page 105), pedestrian flows would degrade slightly to "unimpeded" along Second Street and the Folsom Street crosswalk during both the midday and p.m. peak hours. Other sidewalks and crosswalks would have increased pedestrian traffic but would remain "open" with the exception of midday flows on the Folsom Street sidewalk which would remain unimpeded.

EXISTING AND PROJECTED PEDESTRIAN FLOW

FIGURE 28



TRAFFIC

The analysis of traffic impacts has been conducted on two levels: one level of analysis considered impacts at the regional screenlines, the second level of analysis considered impacts at intersections in and near the downtown.

Regional Freeway Analysis

Analysis of traffic conditions at the regional screenlines has been conducted for both the p.m. peak hour and the two-hour p.m. peak period. A.m. peak traffic conditions at regional screenlines have the effect of metering the amount of traffic that reaches the downtown from outside of the City. This analysis has considered p.m. peak conditions. P.m. conditions are usually most severe on freeways and streets within San Francisco, whereas a.m. peak conditions are most severe at locations outside the City.

Traffic demands at the regional screenlines in 1984 (see Table 7, page 107) during the p.m. peak hour were found to use between 90% and 100% of the available capacity on the freeways and bridges. Although the eastbound capacity of the Bay Bridge is calculated to be 9,000 vehicles per hour (vph), the 1984 peak-hour demand shown in Table 7 represents the effective eastbound capacity. The volume figures shown in Table 7 for 1984 for the one-hour and two-hour periods are averages of several days; thus, values for individual days may be different than the average.

Peak-hour freeway operating conditions in 1984 were found to be generally in Level of Service D to E conditions, which would indicate unstable flows in the 35 mph to 45 mph range. Table B-4, Appendix B, shows the Level of Service for freeway operations. Peak-of-the-peak conditions within the peak hour were found to be worse than the hourly conditions because of surges in traffic demand during the peak hour. Conditions during the peak-period at the screenlines would be similar to those experienced during the peak-hour.

As shown in Table 7, demand during the peak hour in the East Bay and Peninsula corridors would be expected to increase about 15% between 1984 and 2000. Peak-hour demand in the North Bay corridor would increase by about six percent between 1984 and 2000. The project travel demand, about 40 p.m. peak-hour and 60 peak-period outbound regional vehicle trip-ends would represent about 0.1% of the total demand in the year 2000. Both

TABLE 7

OUTBOUND REGIONAL AUTO DEMAND

Regional Auto Corridor	Capacity[1]	1984 Demand[2]	DOWNTOWN PLAN (2000) Demand	DOWNTOWN PLAN (2000) Project Percent	1984 + CUMULATIVE LIST Demand	1984 + CUMULATIVE LIST Project Percent
P.M. Peak Hour						
Bay Bridge (I-80)	9,000	8,540	9,790	0.1	9,480	0.2
Golden Gate Bridge (US-101)	7,200	6,740	7,150	0.1	7,100	0.1
U.S. 101 (south of Harney Way)	8,000	7,390	8,400	0.1	7,800	0.1
I-280 (between Alemany Blvd. and San Jose Avenue)	8,000	7,610	8,650	0.1	8,020	0.1
P.M. Peak Period						
Bay Bridge (I-80)	18,000	17,880	19,330	0.1	18,460	0.1
Golden Gate Bridge (U.S. 101)	14,400	13,870	14,850	0.1	15,380	0.1
U.S. 101 (south of Harney Way)	16,000	14,200	16,530	0.1	14,870	0.1
I-280 (between Alemany Blvd. and San Jose Avenue)	16,000	13,620	15,890	0.1	17,290	0.1

[1] Although the capacity of the Bay Bridge is calculated to be 9,000 vehicles per hour (vph), the 1984 peak-hour demand shown above represents the effective capacity.

[2] The volumes for 1984 for the one-hour and two-hour periods are averages of several days and, thus, volumes for individual days may be different than the average.

Source: Environmental Science Associates, Inc.; Environmental Impact Planning Corp.

the East Bay and Peninsula corridors would have excess peak-hour demand that would not be met during the peak period.[13] The North Bay corridor would have excess demand in the peak period. Excess auto demand would result in either a spreading of the demand into the hours adjacent to the peak period or in increased transit and ridesharing use should additional transit service (beyond that assumed to occur by the year 2000) or ridesharing incentives be provided.

Operating conditions at the regional screenlines would be at or near capacity in Level of Service E. Traffic flow conditions would be expected to be very unstable and could experience temporary flow interruptions throughout the peak period. Peak-of-the-peak conditions would be prevalent during the peak hour and might extend into the peak period. The overall two-hour commute period would not be expected to increase substantially in the future. Rather, the occurrence of peak-of-the-peak conditions, now less than one hour, would most likely expand to fill the one-hour peak.

As shown in Table 7, the list-based cumulative analysis, while not comparable with the year 2000 data, produces similar estimates of future demand. The results reflect the tendency of the list-based method to overestimate regional auto travel. The project would represent about 0.1% of the regional auto demand in this condition. The Bay Bridge and I-280 would have excess demand during the peak hour: the Bay Bridge, the Golden Gate Bridge, and I-280 would have excess demand during the peak period. The same conclusions noted above regarding future operating conditions would apply to this condition as well.

Intersection Analysis

Peak-period observations have been conducted on Clementina Street, First Street, Second Street and Folsom Street. Clemtina Street's existing p.m. peak hour volume is about 75 vehicles (approaching First Street). This volume primarily reflects traffic generated by existing curb parking and off-street lots. Through traffic is limited and the existing traffic flow on Clementina could be described as stable with little congestion. First Street is a heavily traveled link between the downtown and eastbound ramps to the Bay Bridge. First Street currently carries 1,200-1,300 p.m. peak-hour vehicles north of Folsom. As a result of congestion on the bridge, p.m. peak-period traffic on First Street backs up through the First/Harrison intersection with queues sometimes extending through

the First/Folsom intersection. These conditions on First Street can be described as service level E-F. Vehicles on Folsom are not constrained by queuing, and the level of service is A/B. At Second/Folsom and Second/Howard, p.m. peak-hour operation is service level A (calculation sheets are on pages A-28 to A-30 of the Appendix).

The proposed project is estimated to generate an additional 96 new peak hour vehicles (56 San Francisco and 40 regional autos.)[14] Assuming these vehicles all parked in the project garage and exited the garage to Second Street via Clementina, they would constitute a 4% increase in traffic volume at Second/Folsom if they all traveled through that intersection. This would represent a worst case analysis as some vehicles would not park in the garage or would pass through Second/Howard or exit Clementina onto First Street. If all the vehicles traveled through the Second and Howard intersection, traffic volumes there would rise by 4%. These increases would not be measurable within daily fluctuations in traffic and levels of service would remain the same. However, increased congestion at intersections in the project vicinity could disrupt surface Muni operations.

The localized aspects of cumulative development on streets and intersections immediately adjacent to the project site were prepared using underlying traffic growth factors representing "worst case" scenarios. It is estimated that in the City's northeast quadrant, traffic volumes will grow 8% by the year 1990 and 11% by the year 2000.[15] When these traffic growth factors are applied to current traffic volumes, level of service estimates at area intersections can be made for the years 1990 and 2000. These levels of service are shown in Table 8, page 110.

PARKING

The project's parking demand has been calculated on the basis of trip generation and modal split data. Based upon the project's travel patterns, parking demand would be calculated as follows:

- 1,764 daily work trips x 22% auto/1.6 persons per auto[3]/2 one-way trips per auto = 121 long-term parking spaces.
- 4,421 daily non-work trips x 10% auto[2]/1.3 persons per auto[2,3]/2 one-way trips per auto/5.5 turnovers daily[12] = 31 short term parking spaces.

  Total project demand = 152

TABLE 8

EXISTING AND PROJECTED P.M. PEAK-HOUR INTERSECTION OPERATION

	Service Level			
Intersection	Existing[1]	With Project	Year 1990	Year 2000
Second/Folsom	A	A	A/B	A/B
Second/Howard	A	A	A	A
First/Folsom	E/F*	E/F*	E/F*	F*

*Intersection flow is obstructed by congestion and backups from the First/Harrison intersection with the Bay Bridge on-ramps.

[1]EIP counts at Second/Folsom, May 1981; Second/Howard, March 1981; First/Folsom, December 1984.

Project Demand (152 parking spaces) plus spaces existing on-site (74) create a parking demand of 226 spaces. The project would provide 131 spaces in an on-site garage leaving an excess demand of 95 spaces.

Parking in the project vicinity includes 60 parking lots within about a four block radius. These lots have 11,162 parking spaces which are 87% occupied.[16] The project would create a 75 space parking deficit. The deficit could be accommodated by parking facilities in the surrounding area.

The project site lies within the parking belt designated in the Transportation element of the Comprehensive Plan (page 47). The Downtown Plan encourages the short-term use of existing parking spaces within and adjacent to the downtown core by converting all-day commuter parking to short-term parking in areas of high demand.[17] The project site now contains 74 long-term parking spaces. Conversion of the existing parking spaces to short-term and the addition of 57 new short-term spaces would be in accordance with policies stated in the Transportation Element of the Comprehensive Plan and the Downtown Plan.

Clementina Street now has a peak hour traffic volume of 75 vehicles. With additional vehicular activity, localized traffic impacts could be experienced along Clementina Street. The site's existing 74 parking spaces are used primarily by employees, generating about 55 outbound trips during the p.m. peak hour (assuming 75% of the long term spaces generate a p.m. peak-hour trip). The proposed project would be 131 short-term spaces. The short term spaces would generate about 1,440 daily one-way vehicle trips (assuming 5.5 daily turnovers per space). About 15 outbound trips would be generated during the p.m. peak hour (assuming 10% of the short term spaces turn over each hour). This would represent a reduction of 40 peak hour vehicles on Clementina Street.

The estimated parking demand (both long-term and short-term) from the C-3 District in 1984 was found to be about 45,300 spaces, which would occupy about 94% of the 48,000 parking spaces in and near the C-3 District.[18] The short-term parking demand, while representing about 25% of the equivalent daily demand, is about 65% of the daily vehicle travel. Although the equivalent daily demand would leave about 10% of the parking supply vacant, surges in short-term demand (more travel in one period than in another period) can cause temporary localized overloads of parking facilities within various portions of the downtown, even though parking may be available elsewhere in the downtown.

The C-3 District would generate demand for approximately 58,000 equivalent daily parking spaces in the year 2000 under the Downtown Plan, an increase of 28% from 1984. Short-term demand would continue to represent about 25% of the total demand. The project parking demand would represent about 0.3% of the total demand from the C-3 District. The parking supply has been assumed to be about 51,000 spaces. There would be a parking deficit of about 7,000 spaces in the year 2000 if vehicular demand occurs as projected. However, as shown in Table 7, the analysis for the year 2000 forecasts excess auto demand in the peak hour and the peak period. If the excess demand is accommodated on transit or ridesharing, then the overall parking demand would decrease from the above estimate by about 2,300 spaces. If the Goals of the Downtown Plan are met, total parking demand in the year 2000 would be about 48,100 equivalent daily spaces, an increase of six percent over 1984. If the Goals were achieved, there would not be a parking deficit.

The list-based analysis shows future demand for 11,400 spaces from projects in the C-3 District, which when added to the 1984 data, would generate a total demand of 56,700

spaces. While similar to the 58,000-space (unmitigated) demand from the Downtown Plan, the list-based demand is not comparable for the reasons stated above, in particular because the list-based analysis assumes a static modal split and thus overestimates future auto demand.

Although the parking demands discussed above are calculated on the basis of projections for the Downtown Plan, similar conditions would be expected under the five Alternatives in the Downtown Plan EIR. Although not shown in Table 5, parking demand from the C-3 District under Alternative 1 would be about 4% higher than under the Downtown Plan, while that under Alternative 4 would be about 1% lower than that under the Plan.

The project's freight loading needs have been calculated according to City guidelines.[19] The project's freight loading requirement would be:

o	267,760	gsf office space @ 0.1 space/10,000 sq. ft.	=	2.68	spaces
o	15,580	gsf retail and restaurant space	=	1.0	space
	Total		=	3.68	spaces

The project would include three full size freight loading docks and two service vehicle loading areas along the site's Clementina Street frontage.

CONSTRUCTION ACTIVITY

The project would be constructed over an 18-month period, employing about 343 employees at any one time during construction (based on estimated person years of construction). If construction employees exhibit the same travel characteristics as other downtown employees, about 74 auto trips would be generated during the p.m. peak hour. These trips would not change traffic service levels on the adjacent street network. Vehicles used by the 343 construction employees could be accommodated in existing parking lots and garages in the project area. However, construction employees would compete with other employees for the parking available.

During construction, trucks and equipment could disrupt traffic flow along Second and Folsom Streets. If construction trucks use Clementina Street, these vehicles could back on Second Street, affecting traffic flow along Second Street. Cumulative construction

impacts would occur if the proposed project at the southeast corner of Second/Folsom were under construction concurrently with theis proposed project. In particular, construction activity (parked trucks and equipment) on both sides of Folsom Street could reduce the traffic carrying capacity of this street. If either Folsom Street or Second Street are partially blocked, the Second/Folsom intersection would degrade to capacity flows (service level E-F). If Folsom Street is reduced to two lanes, unstable flows would result.

To the extent that construction activity would encroach onto sidewalk areas (reducing the sidewalk width available to pedestrians), pedestrian flows would be disrupted. For one year, construction of the proposed project at the southeast corner of Second and Folsom could disrupt pedestrian flows along the south side of Folsom, diverting pedestrians to the north side of Folsom. If sidewalks are blocked on both sides of Folsom Street, pedestrians would probably be diverted to temporary walkways within the existing parking land temporarily displacing curb parking spaces. If an eight-foot walkway can be maintained, the quality of existing pedestrian flows would be unchanged.

TRANSPORTATION MANAGEMENT

To help achieve long term transportation goals, the project sponsor would initiate a comprehensive transportation system management (TSM) program aimed at reducing the peak-hour effects of project travel pursuant to Section 163 of the City Planning Code (Interim Controls adopted November 19, 1984). This program would continue for the actual lifetime of the project. The project sponsor would execute an agreement with the Department of City Planning for the provision of on-site transportation brokerage services and the preparation of a transportation management program to be approved by the Director of Planning and implemented by the provider of transportation brokerage services. The project sponsor would:

- Designate a permanent Transportation Coordinator as part of the building management staff
- Encourage the investigation and implementation of flex-time programs by providing information on the program's advantages, feasibility, etc.
- Develop a parking program giving priority to ride-sharing vehicles
- Sell Muni Fast Passes and other monthly commute passes on-site
- Make transit routes and schedule information available to employees
- Develop and maintain carpool and vanpool matching services.

[1]San Francisco Department of City Planning, Guidelines for Environmental Review: Transportation Impacts, September 1983.

[2]Caltrans, Tenth Progress Report on Trip Ends Generation, July 1975.

[3]San Francisco Department of City Planning, Office of Environmental Review, Final Environmental Impact Report for The Downtown Plan, EE81.3, certified October 18, 1984. This document is an analysis of projected growth in the C-3 District to the year 2000 under the Downtown Plan and five alternatives. The transportation analysis in the EIR includes projections of future modal splits for work and non-work travel for the p.m. peak period, peak hour and daily time periods. This document is on file and available for public review at the Office of Environmental Review, 450 McAllister Street, Fifth Floor.

[4]The Downtown Plan EIR contains about 50 pages of text devoted to the description of transportation impacts in the greater downtown area, as well as an additional 30 pages of text describing transportation mitigation measures. The information in this EIR is not intended to be a comprehensive summary of the transportation analysis in the Downtown Plan EIR, but summarizes portions relevant to the proposed project and its contribution to cumulative impacts. For details and assumptions used to arrive at the data and results presented in the Downtown Plan EIR, see Sections IV.E, Transportation Setting and Impact, and V.E, Transportation Mitigation, of the Downtown Plan EIR, which are incorporated by reference into this report and summarized in the text as appropriate.

[5]Metropolitan Transportation Commission, Traffic Survey Series A-48 and MA-60, Spring 1977 and Spring 1983.

[6]The analysis of historic trends in travel patterns is from the following sources: Metropolitan Transportation Commission, Travel Observations of the Bay Bridge Corridor, October 21, 1981; Homburger and Dock, Trends in Traffic Patterns at the Bay Bridge and Caldecott Tunnel, U.S. Department of Transportation, DOT-BIP-WP-32-3-77, July 1977; telephone survey of 500 drivers conducted in April 1980 by Golden Gate Transit, data supplied by Alan Zahradnik, Transportation Planner, on February 16, 1983; Office of the Auditor-Comptroller, Comparative Record of Traffic for the Month of November, May 27, 1937 through November 30, 1982, Golden Gate Bridge, Highway and Transportation District; San Francisco Municipal Railway Planning Division, Projections of Future Muni Demand and Vehicle Requirements, October 1982; San Mateo County Transit District, SamTrans Five-Year Transportation Development Plan: 1983-1988, April 1983; California Department of Transportation, CalTrain Caltrans/Southern Pacific Peninsula Train Service Five-Year Plan 1983-1988, July 1983; and traffic volume counts from Department of Public Works, Bureau of Engineering, Division of Traffic Engineering and from 1983 San Francisco Cordon Count, JHK and Associates, July 1983.

[7]See Downtown Plan EIR, pages II.9-II.11 for a comparison of the cumulative list projections with those of the Downtown Plan EIR.

[8]San Francisco Municipal Railway, Short-Range Transit Plan 1983-1988, July 1983. Bay Area Rapid Transit District, Short Range Transit Plan for the Five-Year Period July 1983 Through June 1988, August 1983.

[9]The one-time Transit Impact Fee requires developers of office projects in San Francisco to contribute to a fund to finance the increased cost of Muni services necessitated by their projects at the rate of $5 per gross square foot of new construction. This ordinance was recently upheld by the San Francisco Superior Court. Based on application of the $5 rate to net new office space, (267,760 gsf - 35,000 gsf = 232,760 gsf), the project would yield $1,163,800.

[10]According to Bruce Bernhard, Muni Chief Accountant, telephone conversations, October 11, 1984.

The deficit due to the project would be 372 peak period Muni trips per day x 252 working days per year x $0.50 deficit per ride = $46,872. The total annual Muni trips were derived using the 24-hour trips methodology specified in the Guidelines for Environmental Impact Review: Transportation Impacts, Department of City Planning, September 1983.

[11]Ward Belding, Supervisor of Office of Research, Bay Area Rapid Transit District, telephone conversation, May 1984.

The deficit due to the project would be 520 daily BART trips generated by the project x 252 working days per year x $1.06 deficit per rider = $138,902.

[12]Field Review by George W. Nickelson, EIP Traffic Engineer, September 28, 1983.

[13]Table IV.E.4, p. IV.E.36, of the Downtown Plan EIR contains a discussion of the implications of excess demand at the regional screenlines.

[14]The Downtown Plan EIR provides auto occupancy projections by corridor for peak-hour/peak-period travel. Work travel occupancies are 2.7/2.5 East Bay, 1.9/1.8 Peninsula, 1.6/1.5 North Bay, and San Francisco 1.2/1.2. Non-work travel occupancies are 1.0 for all corridors during the p.m. peak hour and peak period.

[15]Underlying growth factors were derived from background reports for the Downtown Plan EIR and assume a lower degree of mitigation for Downtown Plan goals. Achievement of Downtown Plan goals would greatly reduce these impacts.

[16]Jon Twichell/Associates, South of Market Short-Term Parking Analysis, October 15, 1984.

[17]Downtown Plan Proposal as adopted by the City Planning Commission, November 29, 1984, page 116.

[18]The parking survey data and other supporting calculations and data used in the Downtown Plan EIR transportation impact analysis are on file and available for public review at the Office of Environmental Review, Department of City Planning, 450 McAllister Street, Fifth Floor.

[19]San Francisco Department of City Planning, Amendments to the Planning Code to Implement the Downtown Plan (Interim Controls), November 29, 1984, Section 152.5.

G. AIR QUALITY

Upon completion, the project would affect air quality in two ways: emissions would be generated by project-related traffic and by combustion of natural gas for space and water heating. Transportation sources would account for over 95% of project-related emissions. Projected daily emissions of pollutants in 1990 from project-generated traffic, and from cumulative development traffic, based on the March 10, 1984 list of Cumulative Office Development in Downtown San Francisco (Appendix C, Table C-1, pages A-32 to A-37), are shown in Table 9 (page 117). These emissions are also compared in the table to emissions projected for C-3 District development by the Downtown Plan EIR, and to total emissions projected for the entire Bay Area by the 1982 Bay Area Air Quality Plan. The project would contribute about 2% to the total air pollution generated by cumulative list projects and 5% to the total emissions generated by Downtown Plan development in 1990.

Alternative 1 to the Downtown Plan (covered in the Downtown Plan EIR) would generate about 38% more emissions in 2000 (from development between 1990 and 2000) than would the Downtown Plan. Alternative 4 would generate about 7% less emissions than would the Downtown Plan. Emissions generated by Alternatives 2, 3 and 5 would fall within this range. The types of air quality impacts under these alternatives would be the same as those under the Downtown Plan; their magnitudes would vary in proportion to their differences in emissions.

Motor vehicle trips associated with downtown development would emit more nitrogen oxides (NOx) than hydrocarbons (HC), both of which are chemical precursors of ozone, while emissions from the building's natural gas combustion would consist primarily of NOx. On the basis of the Livermore Regional Air Quality Model (LIRAQ) ozone simulations conducted for the 1982 Bay Area Air Quality Plan, NOx emissions in excess of HC emissions could lead to a slight decrease in peak ozone concentrations in the Bay Area. This relationship between NOx and HC emissions would hold both under the cumulative list scenario and the Downtown Plan scenario shown in Table 10, page 118. Thus, emissions of HC and NOx generated by the project and by cumulative development would not increase the Bay Area ozone concentrations that would otherwise occur. If the HC emission reduction strategies adopted in the 1982 Bay Area Air Quality Plan are successful, these concentrations are expected to attain the Federal standard by 1987.

TABLE 9

PROJECTED DAILY POLLUTANT EMISSIONS

Pollutant	Project 1990[2]	Cumulative List 1990[3]	Emissions (tons per day)[1] Downtown Plan[4] 1990	Downtown Plan[4] 2000	Bay Area[5] 1990	Bay Area[5] 2000
Carbon Monoxide	.34	17.0	6.8	6.6	1,952	1,883
Hydrocarbons	.03	1.4	0.6	0.6	428	428
Nitrogen Oxides	.04	1.8	0.8	0.8	558	610
Sulfur Oxides	.005	0.2	0.1	0.1	194	233
Particulates	.05	2.7	1.1	1.3	562	649

[1]Project, Cumulative List, and Downtown Plan emissions calculated using BAAQMD, EMFAC6C vehicular emission factors. Emissions of CO, HC and NOx include an assumed six minutes of idling time per vehicle trip. Emissions of TSP include dust disturbed from roadway surfaces.

[2]Based on a daily average of 20,000 vehicle miles travelled.

[3]Incremental emissions of downtown area development based on list of projected Cumulative Office Development in Downtown San Francisco as of March 10, 1984 (Table C-1, page A-32 of this report).

[4]Incremental emissions of C-3 District development, per Downtown Plan EIR, Table IV.I.2, page IV.I.12.

[5]Cumulative total emissions of Bay Area development, per ABAG, BAAQMD, MTC, 1982 Bay Area Air Quality Plan, pp. 42, 53 and 112.

Source: EIP Corporation

TABLE 10

PROJECTED WORST-CASE CURBSIDE CARBON MONOXIDE CONCENTRATIONS AT SELECTED INTERSECTIONS

Intersection	Averaging Time	Concentrations (ppm)[1] 1984	Cumulative List 1990[2]	Downtown Plan[3] 1990	Downtown Plan[3] 2000
Howard/Second	1-hour	13.7	10.1	10.1	9.3
	8-hour	10.1	8.3	8.5	7.9
Folsom/Second	1-hour	12.5	9.4	9.4	8.7
	8-hour	10.6	7.8	7.9	7.1
First/Folsom	1-hour	14.6	11.6	11.6	10.4
	8-hour	11.1	8.7	8.7	7.8

[1] Calculations for all scenarios were made using a revised version of the Modified Linear Rollback (MLR) method described in the Downtown Plan EIR. Background concentrations were calculated to be 7.4 ppm for one hour and 5.7 ppm for eight hours in 1984, 6.0 ppm for one hour and 4.5 ppm for eight hours in 1990, and 5.7 ppm for one hour and 4.1 ppm for eight hours in 2000. Underlined values are in excess of the state or federal CO standards. The one-hour state standard is 20 ppm, the one-hour federal standard is 35 ppm, and the eight-hour state and federal standards are 9 ppm.

[2] Based on list of projected Cumulative Office Development in Downtown San Francisco as of March 10, 1984, Appendix C, Table C-1.

[3] Based on growth projection methodology contained in Downtown Plan EIR, Table IV.I.3, page Comments and Responses - I.8.

Source: EIP Corporation

NOx emissions would decrease in San Francisco by about 2% from 1984-2000 but would increase in the Bay Area by about 5% from 1984-2000. It is possible excess NOx emissions generated by cumulative development (including the project) could increase ozone and/or nitrogenous oxidant concentrations further downwind, outside the Bay Area. In addition, incremental NOx emissions generated by the project and by cumulative development throughout the Bay area could increase acid rain further downwind, outside the Bay Area, to a relatively small extent.

In 1990 and 2000 (according to the Downtown Plan EIR), area-wide traffic volumes in the downtown area would increase by about 8% and 15%, respectively, over 1984 volumes; average traffic speeds would decrease by about one mph and two mph, respectively, from 1984 speeds. However, in 1990 and 2000 the average vehicle is expected to emit 32% and 43%, respectively, less carbon monoxide (CO) than in 1984 due to ongoing state and federal emissions controls.

CO concentrations at 11 representative intersections in the downtown study area, as analyzed in the Downtown Plan EIR, would decrease from 1984 to 1990 and thereafter to 2000. CO concentrations at 10 of the 11 intersections would be within the state and federal standards in 1990 and 2000 under the Downtown Plan and the Alternatives. CO concentrations at one intersection (Brannan and Sixth Streets) would continue to exceed the state and federal eight-hour standards both in 1990 and 2000 under the Downtown Plan and the Alternative.

Curbside CO concentrations at selected intersections affected by project-generated traffic, and by cumulative development traffic (based both on the Downtown Plan EIR growth projections and on the March 10, 1984 cumulative list), were projected for worst-case conditions (poor dispersion meteorology), and are compared with the ambient standards in Table 10, page 118. These projections were calculated using a revised version of the Modified Linear Rollback (MLR) method which was developed for the Downtown Plan EIR.

The results indicate that violations of the state and federal eight-hour average CO standards currently occur at the three intersections studied under worst-case meteorological conditions. Although maximum eight-hour average values for 1984 do violate the

standard of 9 ppm, no exceedences of the applicable CO standards are projected for 1990 at any of the locations analyzed, under any scenario.

Emissions of TSP generated by the project and by cumulative development would increase TSP concentrations, which could increase the frequency of TSP standard violations in San Francisco, with concomitant health effects and reduced visibility.

Emissions of SOx generated by the project and by cumulative development would not bring San Francisco's SO_2 concentrations measurably closer to violating the standard.

The 1982 Bay Area Quality Plan contains strategies which consist primarily of HC and CO emission controls on stationary sources and motor vehicles, and transportation improvements, and are aimed at attaining the federal ozone and CO standards. As discussed above, emissions associated with the project and with cumulative downtown development from the cumulative list or under the Downtown Plan are not projected by this EIR or the Downtown Plan EIR to increase ozone concentrations, and thus would not conflict with the objectives of the 1982 Bay Area Quality Plan regarding ozone. Cumulative downtown development is projected by the Downtown Plan EIR potentially to result in a violation of the eight-hour CO standard at the Brannan/Sixth intersection analyzed therein. The model used to make the CO projections might not be accurate to within the percentages of the excesses. Therefore, until additional "hotspot" monitoring is performed to validate the model projections, a determination of whether cumulative downtown development would conflict with objectives of the 1982 Bay Area Air Quality Plan regarding CO cannot be made.

The pollutant emissions and CO concentrations shown in Tables 9 and 10 were projected for 1990 on the basis of two different sets of future growth assumptions, with differing results. In one case, a list of specific projects proposed, approved and under construction was used (the list of Cumulative Office Development in Downtown San Francisco, March 10, 1984, Appendix C, Table C-1, page A-32). In the other case, the employment growth trend approach of the Downtown Plan EIR was used, and those projections presented. In both cases, the method for the air quality analyses was identical. However, the results using projected cumulative development are not directly comparable with those from the Downtown Plan EIR for several reasons.

First, it is reasonable to assume that the projected cumulative development on the list would be completed and occupied sometime between 1990 and 2000, rather than in either of those two analysis years used in the Downtown Plan EIR. The pollutant emissions and CO concentrations were calculated for 1990 using the cumulative list, even though those projects are not expected to be completed until the mid-1990s, in order to provide the possibility of some comparison with the Downtown Plan EIR results. However, this has the effect of artificially increasing the cumulative list results, because average-vehicle emission rates will decline with time, as a result of federal and state controls.

Second, the transportation analysis used for the Downtown Plan EIR differs from that used for the cumulative list, as described in the Transportation Impacts section of this report, page 86. Briefly, these differences include the fact that a cumulative list-based analysis assumes that the same proportion of new employees would commute by private auto as is currently the case. In contrast, the Downtown Plan EIR analysis projects that commuters will shift from driving alone to using carpools and transit, because commute routes such as the Bay Bridge are already at or near capacity and could not accommodate all of the vehicles that would be used if the proportion of persons driving alone to work remained constant.

Other reasons for the differences include the use in the cumulative list analysis of a constant regional distribution of trips, whereas the Downtown Plan EIR forecasts a declining percentage of new employees residing in San Francisco, and the lack in the cumulative list approach of discounting factors to account for trips between individual projects within the Downtown. Also, the cumulative list applies to the entire downtown area, a larger geographical area than that analyzed in the Downtown Plan EIR, which applies to the C-3 district only.

Thus, total (regional) vehicle miles traveled and the resulting pollutant emissions projected using the cumulative list approach are considered artificially high. On a local intersection basis, traffic volumes and the resulting CO concentrations might or might not be higher with the cumulative list approach, depending on the particular location. This is because the cumulative list method does not distribute traffic on all the same streets in the same proportions as does the Downtown Plan EIR method. For the two of the three

intersections analyzed here, the projected traffic volumes and CO concentrations are lower with the cumulative list approach.

The California State Legislature has mandated a biannual Inspection and Maintenance (I/M) program which applies to most cars and light trucks in California. This program went into operation March 1984. Vehicles covered by the legislation must undergo a check consisting of a visual inspection of the vehicle's emission control system, measurement of tailpipe emissions while the vehicle is idling and comparison of the measured emissions rates to the allowable limits for the appropriate year of manufacture and model of vehicle. Vehicles must have the required emission control equipment and must meet the specified standards for hydrocarbons and carbon monoxide. If required emissions control equipment is not present it must be installed. If all required equipment is in place but the vehicle's emissions exceed the standards, the owner is required to pay a maximum of $50 for service intended to result in compliance.

An annual I/M program was evaluated in the 1982 Bay Area Air Quality Plan based on the 1979 source inventory. Based on a predicted reduction in hydrocarbons and CO of 25% in covered vehicles, a reduction in total motor-vehicle generated CO of about 18% would be expected. The reduction in total regional CO emissions would be about 16%. The reduction in motor-vehicle generated hydrocarbons would be about 17%; the reduction in total regional hydrocarbon emissions would be about 6%. It can be seen from this data that the I/M program is expected to result in reductions in hydrocarbons and CO emissions.

Since CO concentrations in the downtown San Francisco area are almost entirely due to motor vehicles, future CO levels are predicted to be about 18% lower than would have occurred in the absence of the I/M program. Thus, the curbside CO concentrations shown in Table 10 and CO and HC emissions shown in Table 9 are expected to be higher than would actually occur.

Direct atmospheric emissions from the operation of the proposed project would result from the combustion of natural gas on-site for water and space heating. Natural gas is a relatively clean-burning fuel; therefore, no visible plume would occur. Exhaust gases

would be emitted at rooftop level and would be diluted to concentrations well below the ambient air quality standards before reaching ground level.

H. ENERGY

Pacific Gas and Electric Company supplies energy to San Francisco customers. Electrical energy is generated from various sources of energy including oil, gas, hydroelectric, geothermal, nuclear, wind, cogeneration and solid waste.[1] In future years, PG&E expects to generate electricity from these sources and from coal.

The proportion of energy from oil and gas is expected to decrease by 1990 with corresponding increases in the proportion of energy from the other sources listed above.[2]

Existing annual energy use at the site of the proposed project is shown in Table 11.

TABLE 11

EXISTING ANNUAL ENERGY USE AT THE PROJECT SITE

Address	Natural Gas Therms	Electricity Kilowatt hours
580 Folsom	3,986	5,500
590 Folsom	--	192,000
596 Folsom	360	3,600
299 Second	720	27,600
81 Clementina	145	30,000
	5,211	258,700

Source: Pacific Gas and Electric Company, San Francisco, California.

The project would require about 44 billion Btu of energy for construction in the form of gasoline, diesel fuel, electricity and lubricants. This is the energy equivalent of 7,850 barrels of oil. Distributed over the estimated 50 year life of the project this would be about 880 million Btu per year, or about 1.7% of the total annual building energy requirements.

New buildings in San Francisco are required to conform to energy conservation standards specified by Title 24 of the California Administrative Code. The State allows building developers to comply with the standards through the component performance standards method which requires the incorporation of a set of specific design features, through the use of nondepletable energy resources, or by demonstrating that the building would consume no more than a specified quantity of energy, expressed as BTU's per square foot-per year (energy budget).[3] Documentation showing compliance with these standards is submitted with the application for the building permit, and is enforced by the Bureau of Building Inspection.

At this stage in the project design, there is insufficient information upon which to base a building energy budget analysis for either Title 24 compliance or other engineering purposes. Therefore, estimates of the likely energy consumption of the proposed project have been made based upon comparisons with other recent projects in San Francisco[4] and assuming compliance with Title 24 by the energy budget method. The resulting estimates are shown in Table 12, page 126.

Daily and annual load distribution curves for the project cannot be estimated at this time because of the lack of detailed design information. As load curves are not governed by Title 24, no reasonable assumptions are readily available. It may be noted, however, that similar projects in San Francisco for which load curves have been developed show peak electrical consumption occurs on hot August or September afternoons (due to demand for cooling), which coincides with PG&E's systemwide peak.[5] The peak electricity demand of the project would be about 1400 KW and would coincide with PG&E's system-wide peak. This would add an estimated .009% to PG&E's system-wide peak loak of 16,000 MW.[6] Representative load curves for natural gas and electricity consumption in office buildings are shown in Figures 29 and 30, pages 128 and 129. The drop in electrical demand at the noon hour shown in Figure 29 is due to smaller demand for appliance operation and cooling as workers stop for lunch. Natural gas demand of other office projects has been predicted to peak during cold January mornings, which does not coincide with the systemwide peak, which occurs on cold January evenings. Peak daily natural gas consumption would be about 16 million Btu per day or about .0004% of PG&E peak load of about 4.1 trillion Btu per day.[7] The actual load curves for the proposed project would be expected to be

TABLE 12

ESTIMATED PROJECT ENERGY USE [1]

Allowable Under Title 24 Energy Budget	
Total annual Btu[2] per square foot of office space	126,000 Btu per square foot per year
Total annual Btu per square foot of retail space	200,000 Btu per square foot per year
Daily Natural Gas Consumption[3]	
Estimated daily natural gas consumption per square foot	40 Btu
Estimated peak daily natural gas consumption[4]	160 therms
Monthly Electric Consumption[5]	
Estimated monthly electric consumption per square foot	1.4 kilowatt hours
Estimated total monthly electric consumption	0.4 million kilowatt hours
Annual Consumption	
Estimated total annual natural gas consumption	36,900 therms
Estimated total annual electric consumption	4.7 million kilowatt hours
Connected kilowatt load	1,700 kilowatts
Estimated total annual energy consumption	51 billion Btu equivalent to 8,976 barrels of oil

Footnotes for Table 12:

[1]The project would include 267,760 sq.ft. of office space, 10,000 sq.ft. of retail space, and 5,580 gsf of restaurant space. Energy use includes space conditioning, service water heating and lighting in accordance with allowable limits under Title 24. Estimated electricity consumed by typewriters, computers, coffeemakers, etc., is included in the

projections, although not included in the Title 24 estimates. Transportation energy use appears in a separate table.

[2]Btu (British Thermal Unit): A standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water 1° Fahrenheit (251.97 calories) at sea level.

[3]The assumed split between electricity and natural gas for office and retail (90% electricity, 10% natural gas) uses is based upon predicted consumption rates of other San Francisco projects. However, this "split" is sensitive to the design used; actual consumption rates may differ considerably.

The amount of gas that would be consumed is based on unpublished building energy consumption data supplied by David Rubin, Department of City Planning, oral communication, April 1984.

[4]As detailed engineering studies have not been performed for the proposed design, estimates of peak natural gas consumption are highly speculative. A review of load curves prepared for other projects indicates that peak demand may be about 50% greater than average demand. The estimate here is based on that assumption.

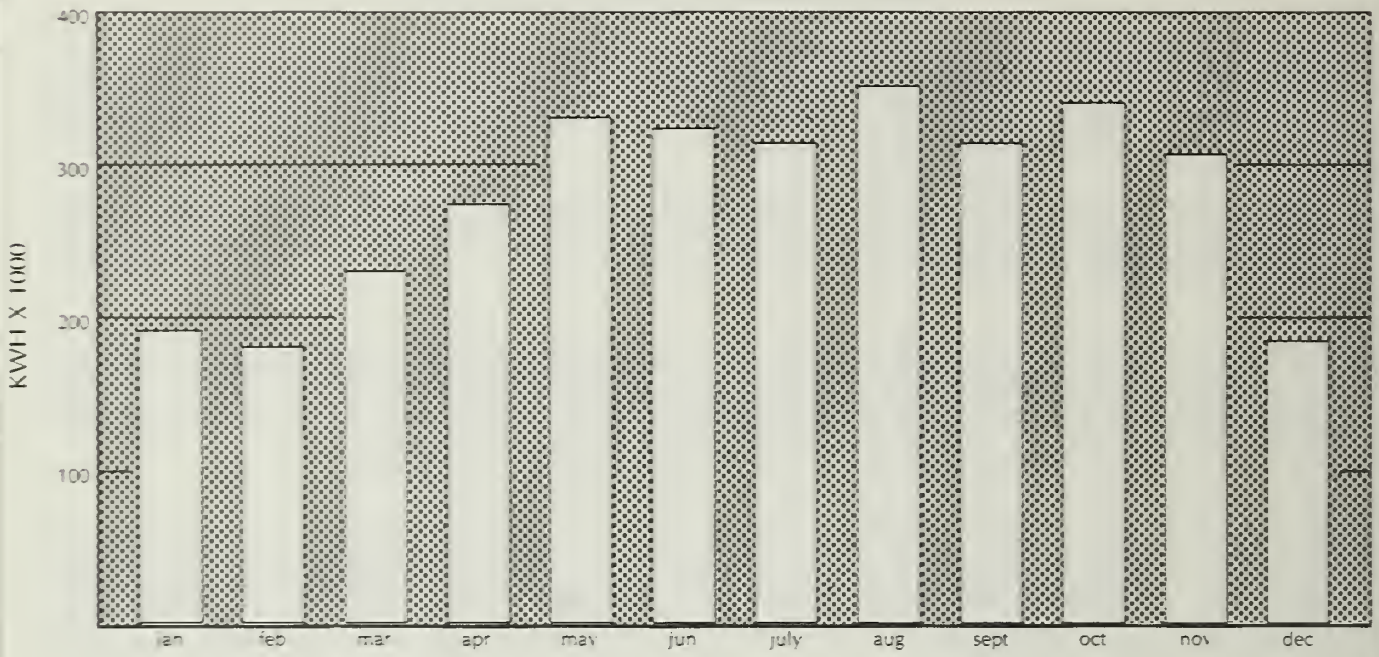
[5]The amount of electricity that would actually be used includes non-occupant loads covered by Title 24 as well as electric loads from computers, copiers and typewriters. The total estimated electricity consumption is based on unpublished building energy consumption data supplied by David Rubin, Department of City Planning, personal communication, April 1984.

Note: Energy Conversion Factors:
one gallon gasoline = 125,000 Btu
one kilowatt (kw) = 10,239 Btu assuming operational efficiency of 33% for fossil or nuclear fueled power plant
one therm = 100,000 Btu
one cu.ft. of natural gas = 1,100 Btu at source
one barrel of oil = 5,600,000 BTU

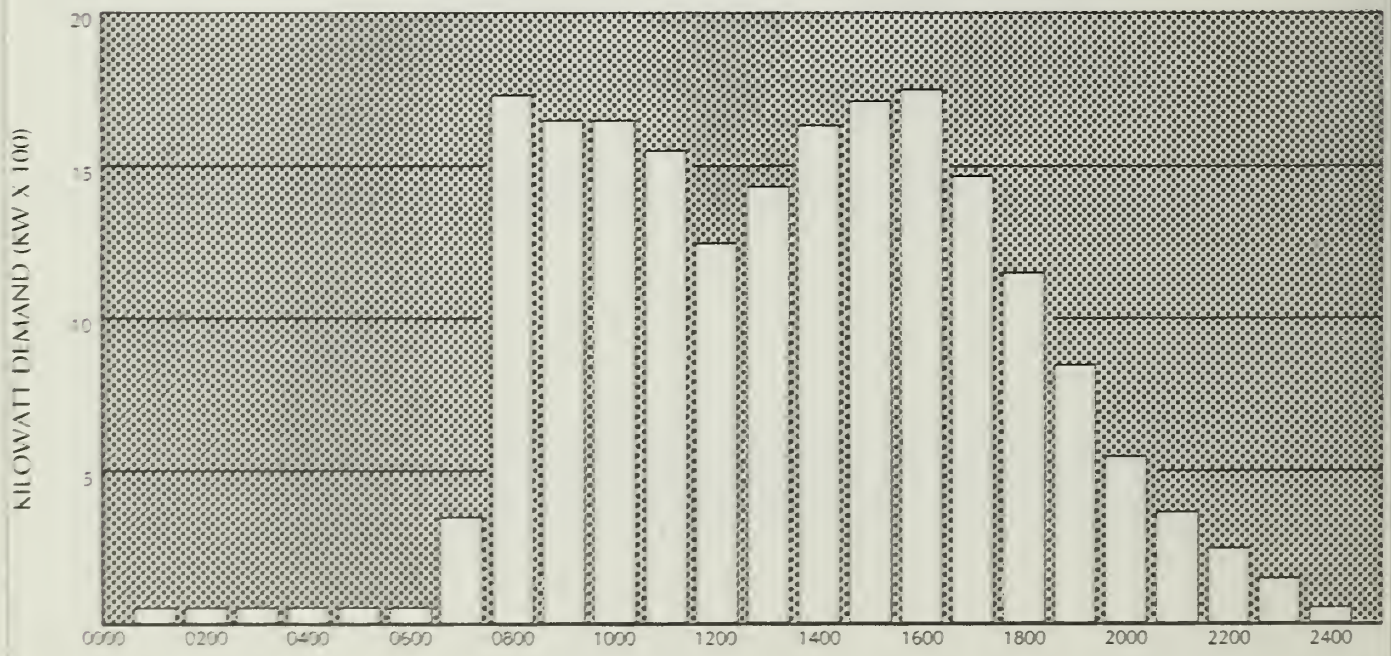
TYPICAL ELECTRICAL CONSUMPTION

FIGURE 29

SOURCE: DEPARTMENT OF CITY PLANNING
FEIR Spear and Main Street Office Building, San Francisco, May 1982



MONTHLY CONSUMPTION

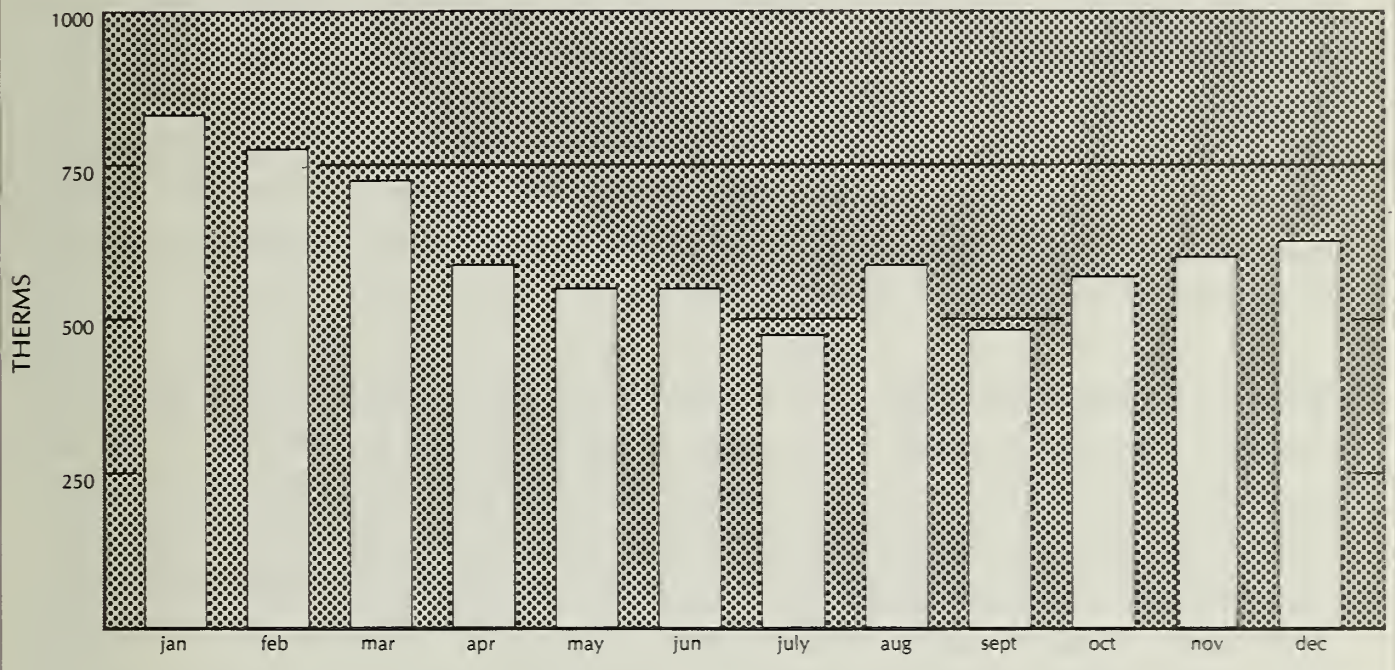


HOURLY CONSUMPTION

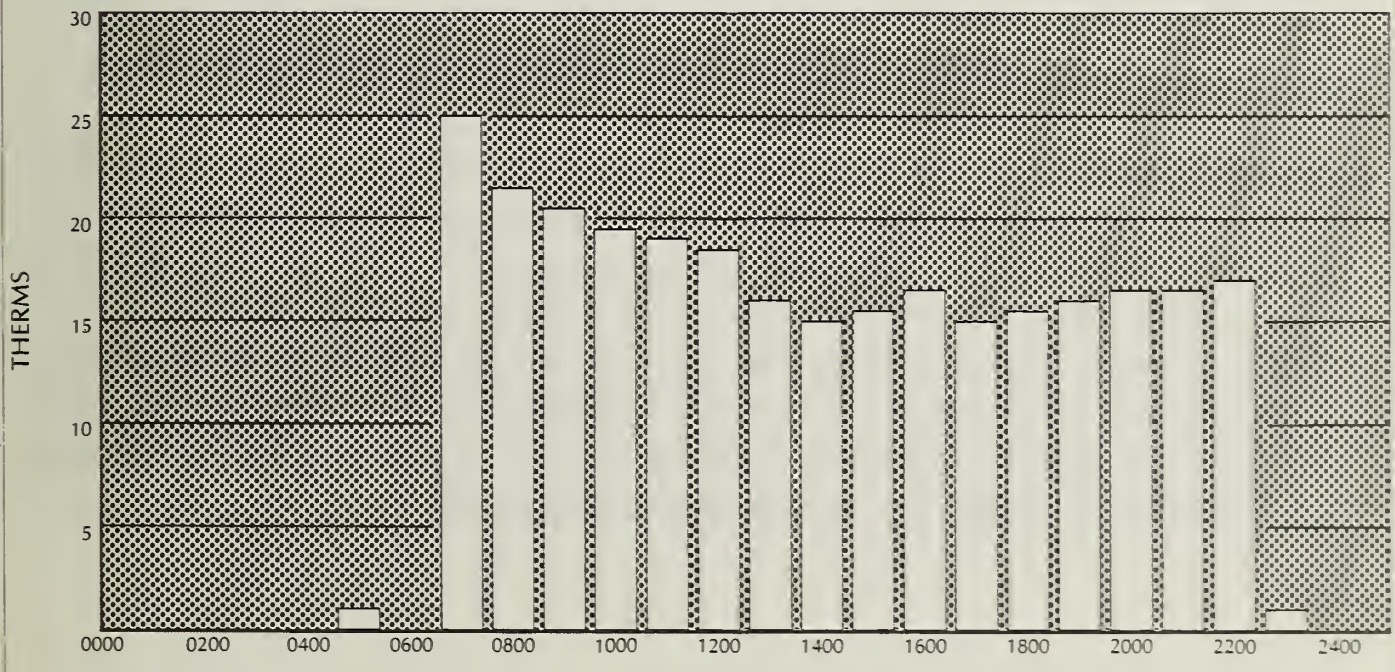
TYPICAL GAS CONSUMPTION

FIGURE 30

SOURCE: DEPARTMENT OF CITY PLANNING
FEIR, Spear and Main Street Office Building, San Francisco, May 1982



MONTHLY CONSUMPTION



HOURLY CONSUMPTION

similar in shape but different in magnitude of demand from those in Figures 29 and 30. Information upon which to base project-specific curves is unavailable at this time.

The project would respond to Policies 1 and 4 under Objective 3 of the City of San Francisco's Energy Element of the Comprehensive Plan through its compliance with Title 24 of the California Administrative Code. Policy 1 is to "increase the energy efficiency of existing commercial and industrial buildings through cost-effective energy management measures." Policy 4 is to "Promote commercial office building design appropriate for local climate conditions. In addition, those measures identified in the transportation section of this report which would reduce motor vehicle travel, and therefore energy consumption, respond to Policy 1 under Objective 4 which states: "Increase the use of transportation alternatives to the automobile."

Based on the March 10, 1984 list of cumulative office development in downtown San Francisco (Appendix C, page A-32), yearly estimated electrical consumption for the projected 19 million square feet of additional office space in downtown San Francisco would be approximately 340 million kWh of power per year (see Appendix C, Table C-1, page A-32 for a list of these projects).[8] Pacific Gas and Electric Company, in examining its ten-year load growth projections for San Francisco, believes that growth rates of net new office space in the downtown area will diminish in the next decade from the historic figure of 1.5 million square feet per year to between 1 million and 1.2 million square feet per year.[9] Total increased energy demand for the next decade would be approximately 200 million kWh of electricity per year, less than projected using the cumulative list.[10] The lower PG&E prediction is largely due to its lower estimation of future development.

Projections of electrical use for growth that would occur under the Downtown Plan EIR indicate an increase of about 210 million kWh of electricity per year between 1984 and 1990 as a result of all new development occuring in the C-3 District. From the period 1984 to 2000, electrical consumption rates would increase annually by 330 to 350 million kWh above present figures, or 120 million to 140 million kWh per year above the increases estimated for the 1984-1990 period.[11] Electric requirements for development that would occur with the alternatives analyzed in the Downtown Plan EIR would increase between 300 million and 500 million kWh per year between 1984 and 2000.[12]

Natural gas consumption for new office development would be less than current demand, which includes consumption in older, less energy-efficient buildings.[8] Based on growth estimates contained in the Downtown Plan EIR, the Department further estimates that, between 1984 and 2000, gas consumption will grow by 470 million cubic feet (about five million therms), per year of which 210 million cubic feet (about two million therms) per year would be for office uses.[11] Between 1984-2000 natural gas requirements for development that would occur with the alternatives analyzed in the Downtown Plan EIR would increase between 580 and 810 million cubic feet (about six to nine million therms) per year between 1984 and 2000.[12]

For two reasons, referenced estimates in the Downtown Plan EIR are not directly comparable to those estimates made by applying energy consumption factors to the square footage of projected cumulative development (list method). First, the list-based energy projections estimate energy demand at the time of full buildout (mid-1990s) rather than during the 1984-1990 and 1990-2000 time periods as in the Downtown Plan EIR. Second, about 75% of the projects on the March 10, 1984 list of projected cumulative development in downtown San Francisco fall within the C-3 District boundary, which means the list method estimates energy consumption for a larger area than the Downtown Plan EIR. The PG&E projection cannot be compared to the projections in the Downtown Plan EIR because they cover different time periods. A comparison of the Downtown Plan and PG&E estimates for projected energy demands in downtown San Francisco for 1990-2000 is being prepared by PG&E in a report to be released later this year. PG&E plans to meet increased San Francisco energy demands to the year 2000 are discussed on pages IV.G.13-14 of the Downtown Plan EIR, which are hereby incorporated by reference. In summary, that material indicates the demand increases in electricity would be met from nuclear sources, oil and gas facilities, hydroelectric and geothermal facilities, and other sources such as cogeneration, wind and imports. PG&E plans to continue receiving most of its natural gas from Canada and Texas under long-term contracts.

Transportation demand generated by the proposed project would also result in energy consumption. The amounts of electricity, gasoline and diesel fuel which would be consumed by various modes of transit are shown in Table 13. These figures were calculated based on data contained in the Downtown Plan EIR. The total annual

transportation energy which would be consumed by the proposed project is 4.3 billion Btu, the energy equivalent of 800 barrels of oil.

TABLE 13

PROJECT RELATED ANNUAL TRANSPORTATION ENERGY CONSUMPTION [1]

	Electricity (kilowatt hours)	Gasoline (millions) (gallons)	Diesel (gallons)	Total BTU (millions)
Auto/Taxi/Jitney/Motorcycle		18,000		2,500
BART	106,000			1,100
Muni Electric	21,000			200
Regional Bus Systems			2,700	1,400
SPRR			700	100
Project Total	127,000	18,000	3,400	4,300

[1] The methods used to calculated these figures are described in detail in the Downtown Plan EIR, EE81.3, certified October 18, 1984, Appendix N. The associated data is contained in Table N.6.

[1] Pacific Gas and Electric Company, 1981 Annual Report, San Francisco, California, 1982.

[2] Pacific Gas and Electric Company, 1980 Annual Report, San Francisco, California, 1981.

[3] State of California Energy Resources Conservation and Development Commission, Conservation Division, Energy Conservation Design Manual for New Nonresidential Buildings, 1984.

[4] Unpublished building energy consumption data.

[5] Load curves for air-conditioned office buildings in San Francisco tend to be similar across a wide range of building designs. This is because energy consumption rates correlate well with outside temperature and working hours. The load curves shown in Figures 29 and 30, pages 128 and 129, were selected to provide an indication of the shape of the actual load curves, which cannot be calculated until the design work has proceeded further. An example of similar load curves can be found in the Final EIR for the Second Street Square (82.591E), FEIR certified January 12, 1984.

[6]Pacific Gas and Electric Company, March 1982, "Summary of Loads and Resources, (Form Number R-1A).

[7]Hubert Luders, Industrial Power Engineer, PG&E; letter communication, April 13, 1982.

[8]Energy consumption factors of 18 kWh sq.ft./year and 11 cu.ft./year (about 12,100 BTU) are based on unpublished data of actual building consumption rates supplied by David Rubin, Department of City Planning, personal communication, April 1984, and include base power consumption of the building core (uses covered by Title 24) and power demands of electric office machines (uses not covered by Title 24).

[9]Ken Austin, Commercial-Industrial Marketing Supervisor, Pacific Gas and Electric Company, letter of March 23, 1984. This letter is available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister St., 5th Floor, San Francisco.

[10]PG&E's analysis of a typical office building yielded an annual consumption of about 17 kWh per sq. ft. per year which agrees with the city's estimate within the limits of estimation methodology.

[11]City and County of San Francisco, 1984, Downtown Plan EIR, Volume I, pp. VII.G.1-VII.G.17. The Downtown Plan EIR uses a consumption rate factor of 18 kWh/sq.ft./year from 1984-1990 and 16 kWh/sq.ft/year from 1990-2000. These different factors are due to Title 24 revisions to reduce building energy budgets. These new standards would be reflected by lower electrical consumption in buildings constructed by 1990.

[12]City and County of San Francisco, 1984, Downtown Plan EIR, Volume I, pp. IV.G.1-IV.G.17, and pp. VII.G.1-VII.G.4.

I. EMPLOYMENT AND HOUSING

1. Employment

At full operation, the proposed project would provide about 1,053 permanent jobs for office, retail and janitorial/service functions. These would include about 974 office workers (at one worker per 275 gsf of office space for 267,760 square feet), 16 restaurant workers (at one worker per 350 gsf for 5,580 gsf), 29 retail workers (at one worker per 350 gsf for 10,000 square feet), 25 janitorial/service workers (at one worker per 12,000 gsf for the entire building) and 9 parking operators (at one worker per 5,100 gsf for 45,734 square feet).[1] The proposed project would net 949 new permanent jobs for office, retail and janitorial/service functions.

The jobs generated by the proposed project would create additional Bay Area employment through a multiplier effect. Assuming that the new jobs created by the project were primarily in the finance, insurance and real estate (FIRE) industries, about 4,048 additional jobs in other sectors of the Bay Area economy could result. Table 14, page 135, shows the distribution of this secondary employment by sector. The multiplier encompasses the entire Bay Area. As a result, the specific number of additional jobs in San Francisco created by the multiplier effect is impossible to calculate.

An estimated 4,593 permanent net new Bay Area jobs would be supported by the project's addition to the stock of office space (949 net new direct jobs plus the 3,644 net new jobs induced by the multiplier).

Construction activities are expected to take about one and one-half years and generate about 221 person-years of construction labor.[2] As a result of project construction's multiplier effect, about 343 additional person-years of employment would be generated in the Bay Area.[3]

2. Housing

a. Project-Related Effects

The office project would increase the demand for housing in San Francisco. Assuming the project's housing demand would be that projected by the City Planning Commission's Office-Housing Production Program (OHPP), the project would generate a demand for 207

TABLE 14

SECONDARY EMPLOYMENT DISTRIBUTION IN THE

BAY AREA AS A RESULT OF THE MULTIPLIER EFFECT

Sector	Employees	
	Gross	Net
Office	3,934	3,538
Computer	0	0
Retail	35	35
Maintenance	60	60
Hotel	0	0
Restaurant	19	12
TOTAL	4,048	3,644

Source: EIP, based on the Association of Bay Area Governments Study, 1980 Hybrid Input - Output Model for the San Francisco Bay Region, April 1984, page XIV. The multipliers used in the analysis are Type II, which includes indirect and induced employment generation, and should be viewed as the theoretical maximum impact level. Actual employment generation would probably be somewhat less. Columns may not total due to rounding. Multipliers are: office = 4.04; retail = 1.22; maintenance = 2.36; hotel = 1.37; restaurant = 1.22.

housing units.[4] This estimate assumes that 40% of the new office workers would live in San Francisco and their new households would contain 1.8 San Francisco office workers.

An alternative analysis of the relationship between downtown office growth and housing demand in San Francisco was documented in a report that appears as Appendix C, pages 289 through 329, of the 101 Montgomery Street EIR, certified by City Planning Commission Resolution 8941, May 7, 1981. Prepared by the economics firm of Recht Hausrath & Associates, this report is available for public review at the Office of Environmental Review, 450 McAllister Street, fifth floor, and is hereby incorporated by reference into this EIR pursuant to Section 15150a of the California Environmental Quality Act (CEQA) guidelines.

This study estimated that 15% to 30% of the people newly employed in San Francisco as a direct result of downtown office projects would move to San Francisco, and that there is an average of 1.4 San Francisco workers in each San Francisco household containing downtown workers. Under these assumptions, the project would create a demand for about 100 to 200 households in San Francisco. The study further concluded that most people cannot afford housing costs in the City despite relatively high wages and employment opportunity. According to a more recent study by Recht Hausrath and Associates on the economic basis for an office-housing production program, the project would create a demand for about 90 additional housing units in San Francisco.[5]

b. Housing Affordability

Based on available data, an approximation of a housing affordability analysis appears in Appendix E, Table E-2, page A-50. Data in the table rely on published sources of office worker incomes (not household income), and prices of housing (without regard to housing availability). Assumptions are made regarding ratio of housing expenses to income, mortgage interest rates and down payments. Analysis based on these data and assumptions indicates that most project employees would not be able to afford housing ownership in San Francisco, although a significant minority, depending on the number of workers per household, would be able to do so. Most project employees, except the lowest-paid clerical employees desiring to live alone, would be able to afford rental housing in San Francisco.

Pursuant to CEQA guidelines, Section 15150a, discussion of housing affordability for new office workers, is incorporated by reference from the Second Street Square Final EIR, 82.591E, certified January 12, 1984 (pages 53 to 55). Briefly, while a survey of occupants of a building comparable to the project would yield some housing affordability data, accurate identification of housing affordability characteristics for persons entering the San Francisco housing market as a result of a new office project is virtually impossible. Two major steps are required in such analysis. The first step involves identification of the workers who are newly employed in San Francisco as a result of the project. The problems with making such a determination include: a) the identity of persons employed in the newly constructed space cannot be known prior to occupation of the project; b) persons working in newly constructed space would not necessarily be newly employed in San Francisco; c) newly created employment opportunities may be filled by persons already employed in San Francisco; and d) persons newly employed in San Francisco in newly created jobs may not have obtained their jobs as a result of the project.

The second step involves determining the amount of money that the household of the new workers could, or would, pay for housing. Such an analysis would require a survey beyond the usual areas of housing preference, current housing costs and income, to determine personal household information such as family assets, debts, tax position, etc. Since many people may be unwilling to provide such personal information, the responses received would not accurately reflect current housing affordability.

3. Cumulative Effects

a. Downtown Office Space

The proposed project, together with other major downtown office buildings under formal review (8.7 million net new square feet), approved (4.8 million net new square feet) and under construction (5.1 million net new square feet) would add about 19.0 million gsf of net new office space if all were to be built (see Appendix C, Table C-2, page A-42 of this report). This list subtracts existing office space, on the sites of new buildings, that would be demolished. Of the 19.0 million gsf of net new office space on the cumulative list, about 13.0 million are within the C-3 District.

Forecasts for alternatives in the Downtown Plan EIR for the C-3 District indicate a total of about 70.5 million gsf of office space in 1990 and between 77.5 and 86.5 million gsf of office space in 2000, an increase of 14.4 to 24.4 million square feet. The Downtown Plan would result in an increase of about 16.8 million square feet.[6] These forecasts considered land availability, location preferences, market conditions and economic trends as independent variables, plus various zoning and planning policies of the Downtown Plan and the five alternatives analyzed in the Downtown Plan EIR. The Downtown Plan EIR forecasts space expected to be built and occupied in the C-3 District between 1984 and 2000.

The amounts of office space on the cumulative list and in these forecasts, although distinct from each other, can be compared. The list contains about 13.0 million square feet of office space in the C-3 District; the Downtown Plan EIR indicates about 8.4 million square feet of office space being added to the C-3 District between 1984 and 1990. The 13.0 million square feet on the list would be expected to be absorbed in the mid-1990s.

Office space projections for all alternatives in the Downtown Plan EIR for the year 2000 would exceed both existing and cumulative-list office space, as the cumulative list cannot take into account projects not yet proposed. Office space on the cumulative list would be absorbed in the mid-1990s under all Downtown Plan EIR alternatives. These comparisons are based on the assumption that all projects on the cumulative list would be built as proposed and projects not yet proposed (i.e., not on the cumulative list) would not be built before the years identified above. In addition, these comparisons are based only on C-3 District projects on the cumulative list.

b. Residence Patterns and Housing

This section takes a long-term perspective, focusing on changes in downtown office workers living in San Francisco and the housing market implications of downtown growth.

Future Residence Patterns: Employment growth and building development in downtown San Francisco will result in more employees working and living in the City. Over time, more existing residents will take San Francisco jobs and others who take San Francisco jobs will move into the City.

Downtown Plan Forecast as Cumulative Context: Forecasts of residence patterns in the year 2000 were prepared for the Downtown Plan EIR.[7] The scenario of C-3 District building development and employment growth under the Downtown Plan, as described in the Downtown Plan EIR, incorporates the effects of policies affecting the size, cost and location of new development as well as underlying economic conditions influencing the demand for space. The forecasts of residence patterns for this growth scenario incorporate future housing, labor force and employment patterns in San Francisco and throughout the region and consider changing demographic, housing market and transportation factors.

According to the Downtown Plan forecasts, approximately 189,000 C-3 District office workers would be living in San Francisco in 2000. This represents an increase of 30,000 residents employed in C-3 District offices over the 159,000 estimated for 1984, a 19% increase.[8] Relatively more employed San Franciscans would be employed in C-3 District office jobs. The percentage (employed San Franciscans holding C-3 District office jobs) would increase from 45% in 1984 to 47.5% in 2000. Relatively fewer C-3 District office jobs would be held by San Franciscans. The percentage (C-3 District office jobs held by San Franciscans) would decline from 55.5% in 1984 to 50.2% in 2000. These changes would result from cumulative development and employment growth in the C-3 District between 1984 and 2000.

It is important to understand the difference between the two percentages above. In each case, the same estimate of the number of jobs held by San Francisco residents is compared to an estimate for a larger group: to all employed residents of the City in the first instance and to all C-3 District office employment in the second. The percentages are different since the number of employed residents is different from the number of office jobs. These percentages describe the same employment situation, but from different perspectives. The percentage of jobs held by City residents is used more often, primarily for transportation analysis. The percentage of City residents who work in downtown San Francisco is used less often. This latter perspective is a more direct measure of the role of downtown jobs in employing San Francisco's residents.

The Downtown Plan forecasts fall within the range of estimates of C-3 District office workers living in San Francisco that was identified by the analysis of alternatives in the

Downtown Plan EIR. By 2000, the alternative forecasts range from 189,000 to 193,000 office workers living in San Francisco. The relative comparisons described above apply to all the alternatives; the percentage of total employed San Franciscans working in C-3 District office jobs would increase while the percentage of C-3 District office jobs held by residents would decline.

The proposed project, if approved, would be developed during this time period; businesses and employees would occupy the building; and, therefore, the project would contribute to the changes described above. The project would add about 232,760 square feet of office space to downtown San Francisco. Over the 1984-2000 period, a net addition of about 16.8 million square feet of office space is forecast for the C-3 District under the Downtown Plan.[9] (This estimate includes development of new office space and incorporates conversions and demolition of existing space.) The proposed project represents about 1.4%of the total increase in office space in the C-3 District over this period.

The residence patterns of future occupants of the 299 Second Street project can be estimated using information developed in the Downtown Plan analysis. This approach assumes that employment densities for the building and residence patterns for those working in the building would reflect the average conditions for all similar buildings and occupants in the C-3 District in 2000. According to this approach there would be about 372 people employed in the project who would live in San Francisco. The project would account for about 0.2% of all San Franciscans employed in the C-3 District in 2000 under the Downtown Plan forecast.[10]

c. Estimates Based on the List of Office Projects in Downtown San Francisco

An alternative means of evaluating the cumulative effects of projects such as the proposed 299 Second Street project is to use the list of all projects that are under construction, approved, or under formal review. (This list is discussed in Appendix C, pp. A-31 to A-44. The list includes projects throughout the greater downtown, which includes the C-3 District as well as adjacent areas.) It is possible to calculate from the list the change in the number of downtown workers living in San Francisco associated with this amount of development. Adding this number to the 1984 base estimate of downtown workers residing in San Francisco produces an estimate of total downtown workers living in the City, once all projects on the list were built and occupied. The results from this

approach indicate that about 230,000 workers in the greater downtown area would live in San Francisco at that time.[11]

This approach uses the methodology developed for the September 1983 Transportation Guidelines list of cumulative office development prepared by the Department of City Planning. Unlike the Downtown Plan EIR forecast approach, this approach incorporates no changes over time in either employment densities or residence patterns. It assumes that current average conditions (reflected in the Transportation Guidelines) would continue throughout the build-out period for the list. Using the list approach, approximately 418 net new project workers would live in San Francisco (44%); 256 in the East Bay (27%); 152 on the Peninsula (16%); and, 123 in the North Bay (13%).[12] The project would account for about 0.2% of all downtown workers living in San Francisco when all projects on the list were built and occupied.

d. Differences In Cumulative Approaches

There are several important differences between the two approaches to cumulative analysis: the Downtown Plan EIR approach of forecasting space and employment and the approach of using a list of proposed projects. This first approach incorporates forecasts of new development for all land uses (office, retail, hotel, and housing) and accounts for the demolition and conversion of existing space. The second approach accounts for the net addition of office and retail development. Moreover, the Downtown Plan EIR forecast methodology incorporates changes in economic activity and employment that would occur in the use of existing space, while the list includes the changes accommodated by net new construction and some conversions.[13] The Downtown Plan EIR forecast also includes employment growth, such as building maintenance and construction employment, that is not directly related to the occupancy of space. The Downtown Plan EIR forecast incorporates changes over time in residence patterns, reflecting changes in the regional distribution of population, housing, and employment. The list approach applies relationships derived from current condition to the future situation, assuming no changes over time. The Downtown Plan EIR approach is currently limited to the C-3 District while the list covers a larger geographic area. In addition, there is no definite timeframe associated with the list, while the Downtown Plan EIR forecast represents a best estimate of the development likely to be built and occupied from 1984 to 2000. It is because of

these differences that the cumulative estimates of future residence patterns under each approach are not comparable.

e. Housing Market Implications[14]

With continued employment growth, there would be more people with preferences for San Francisco housing and with greater financial resources to pay for housing. This would affect the City's housing market.

At a minimum, continued office employment growth at the levels reflected by the Downtown Plan EIR forecast and the cumulative list would contribute to keeping prices and rents at their current levels (in constant dollars). Depending on the future of other factors (such as interest rates and the availability of mortgage money), employment growth could contribute to a future situation where prices and rents are moderately higher, on average, than current levels.

Higher prices/rents for San Francisco housing would mean that some people would decide not to move to San Francisco, current residents who rent would find it more difficult to buy a home, and some existing residents would move out of the City if they find more acceptable housing elsewhere. Many others would continue to live in San Francisco and to pay higher prices/rents for City housing. Still others, who are unable to pay more, would be forced to accept housing that does not meet their preferences or needs. And finally, owners of existing units would benefit to the extent that their investments would appreciate.

The proposed project, as part of the future pattern of downtown office development, would contribute to these housing market impacts. The project's individual contribution cannot be separately identified.

f. Regional Perspective on Residence Patterns and Housing

The residence patterns of San Francisco workers can also be considered from a regional perspective. As discussed in Residence Patterns and Housing, pp. 157-159, the Downtown Plan 1984 estimates and forecasts for the year 2000 indicate that the largest number of

C-3 District workers would live in San Francisco (50%), followed by the East Bay (29%), the Peninsula (13%), and the North Bay (8%).[15]

In terms of the region's housing market, downtown office development and employment growth would not, by themselves, make a noticeable difference in the housing markets in other Bay Area counties or in the region overall. C-3 District workers would represent a relatively large share of all employed San Franciscans and a relatively smaller proportion of the labor force in other Bay Area counties. As a part of total regional employment growth to the year 2000, however, increases in San Francisco office employment can be viewed as contributing to regional housing demand. A strong regional economy has and will continue to be a factor supporting a competitive regional housing market with relatively high housing prices and rents.

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[1]Office employment derived from San Francisco Department of City Planning, Guidelines for Environmental Review, page 14. Retail and maintenance employment derived from analysis in 101 Montgomery Street, FEIR, certified May 7, 1981, page 77.

[2]All multipliers based on the Association of Bay Area Governments Study, 1980 Hybrid Input - Output Model for the San Francisco Bay Region, April 1984, page XIV. The multipliers used in the analysis are Type II, which includes indirect and induced employment generation, and should be viewed as the theoretical maximum impact level. Actual employment generation would probably be somewhat less.

[3]An estimated $21,920,000 (1984 dollars) would be spent during construction. Employment estimates assume labor costs would be about 55% of the total $21,920,000 x 55% = $12,056,000 including direct wages, payroll taxes and fringe benefits, and annual cost of $36,400 per construction worker.

[4]Office Use: $\frac{232{,}760 \text{ net new square feet}}{250 \text{ square feet}} \times 40\% \div 1.8 = 207$ housing units

The OHPP program is not used by the City to determine full housing mitigation measures. The program utilizes a formula to determine housing "credits" for which a project is obligated to obtain through several different mechanisms (e.g., actual construction, donation to mortgage bond revenue program, etc.). The criteria utilized by the City to determine impacts pertains to actual units of housing (credits under OHPP refers to numbers of bedrooms and low and modest income housing).

The project would have to conform to whatever housing policies are in effect for project approval by the City Planning Commission.

[5]Recht Hausrath and Associates, Summary of the Economic Basis for an Office-Housing Production Program, prepared for the San Francisco Department of City Planning, July 19, 1984, page 11.

[6]Department of City Planning, Downtown Plan EIR, EE81.3, certified October 18, 1984, pages IV.B.17-IV.B.31 and Appendix G, pages G.37-G.41.

[7]For a description of the methodology used to forecast residence patterns, see Appendix I, Downtown Plan EIR, EE81.3, certified October 18, 1984, pages I.8 - I.30. For a description of existing and forecast future residence patterns of C-3 District workers, see Downtown Plan EIR, Section IV.D, Residence Patterns and Housing. Appendix I and Section IV.D of the Downtown Plan EIR are hereby incorporated by reference into this EIR pursuant to Section 15150 of the CEQA Guidelines.

[8]Downtown Plan EIR, page I.36.

Only the forecasts of residence patterns for C-3 District office workers are described here. The Downtown Plan EIR presents residence patterns for all C-3 District workers, of which office workers represent the largest group.

The forecasts presented here are for all C-3 District office employment, including management/technical and trade/customer service office activities.

[9]Downtown Plan EIR, page IV.B.34.

[10]In order to ensure consistency with the cumulative transportation analysis and to provide information on region-wide impacts, this section does not use the OHPP and 101 Montgomery formulas for estimating the number of workers who would live in San Francisco. These formulas only provide estimates of office workers living in San Francisco; they do not include factors for estimating workers living in other parts of the region.

[11]For the 1984 estimates of workers in the greater downtown area, the C-3 District estimates of employment and residence patterns prepared for the Downtown Plan EIR were used as a base to which order-of-magnitude estimates for that year for the other downtown areas were added. The September 1983 Transportation Guidelines, prepared by the Department of City Planning, were used to estimate employment and residence patterns for projects on the March 10, 1984 list for the greater downtown area. The workers associated with these new projects were added to the 1984 base year total estimate.

[12]See Transportation Guidelines, pp. 28 and 30 for maps of the Cumulative Development Study Area and the South of Market/Folsom area.

[13]As explained in the Downtown Plan EIR, the use of existing space is expected to intensify by the year 2000. For example, office employment growth is forecast to exceed the

growth of employment that would be accommodated by the development of new office space. From 1990 to 2000, more intensified use of existing space would be equivalent to about a 40% increase in the net addition of office space forecast for that period. (See p. IV.B.41 in Downtown Plan EIR.)

[14]This subsection presents a summary of the discussion in the Downtown Plan EIR. (See pages IV.D.77-IV.D.82.)

[15]For a description of the residence patterns forecast methodology, see the Downtown Plan EIR, Appendix I, pp. I.8-I.30.

J. NOISE

1. Construction Noise Impacts

To assess noise levels at the project site, 1981 noise measurements made at the locations on Figure 31, page 147, were reviewed. The first location is representative of the noise exposure of buildings facing Second and Harrison Streets; the second location, the noise exposure of the proposed buildings facing Second and Folsom Streets. The data obtained during the measurements are summarized in Table 15, page 148.

Construction of the 299 Second Street office building would take place in three phases: demolition and excavation (about two months duration), foundation construction (about two months duration), and building erection (about 14 months duration). Construction noise levels would fluctuate depending upon the following variables: the construction phase, phase duration, the type or types of equipment used during each phase, the noise emitted during the noisy mode of any particular item or items of equipment in use, the number of hours in a day the equipment would be operated in this noisy mode, equipment mobility (e.g., the noise source may be a stationary air compressor or a self-propelled backhoe), the distance between the noise source and the receptor, and the noise propagation characteristics of the path between the noise source and the receptor (e.g., shielding by barriers or intervening buildings will result in a reduced noise level at the receptor). The worst-case noise impacts associated with the various phases of construction have been estimated for this study.

During the two-month excavation phase, bulldozers, graders, haul trucks and front-end loaders would be expected on the project site. These pieces of equipment generate from 70 to 85 dBA at 50 feet. During the two-month foundation construction phase, the major noise source would be concrete-pumping trucks. These trucks generate noise levels of up to 85 dBA at 50 feet. After foundation construction, major noise sources during the building erection phase would be concrete pumpers, power saws, cranes, air compressors, generators, and impact torque wrenches. These pieces of equipment emit from 70 to 95 dBA at 50 feet. This portion of the building erection phase would last through the first year of construction. Noise from impact wrenches, used intermittently during the framing of buildings, has been measured[1] at construction projects in downtown San Francisco at up to 95 dBA at 50 feet.

NOISE MEASUREMENT LOCATIONS

FIGURE 31

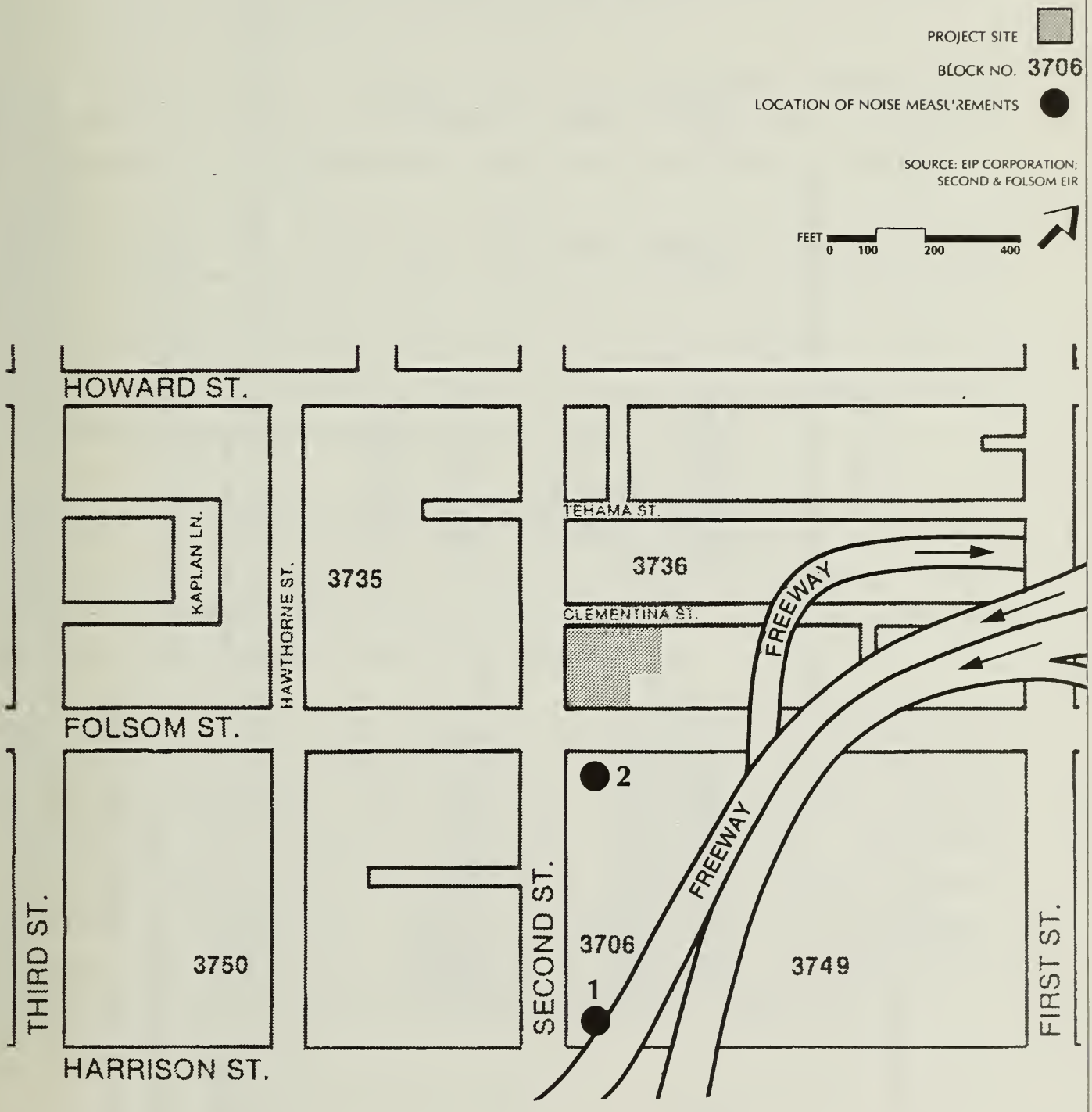

TABLE 15

RESULTS OF ON-SITE NOISE MEASUREMENTS

Site No.	Location (see Figure 30)	Day and Time of Measurement	L_{eq}[1]	L_{max}[2]	Comments
1	25 feet from edge of Second St. and 25 feet from edge of Harrison St.	12 May 1981 10:21-10:26 a.m.	72	88	Freeway is background; peaks due to buses, trucks
		12 May 1981 4:30-4:45 a.m.	72	84	Local traffic is dominant
2	25 feet from edge of Second St. and 25 feet from edge of Folsom St.	12 May 1981 10:30-10:35 a.m.	73	87	Freeway at 63-64 dBA; local traffic is dominant
		12 May 1981 3:30-3:45 p.m.	72	85	Local traffic is dominant

[1]The L_{eq} is the equivalent steady-state sound level, in dBA, which, in a given period of time, would contain the same acoustic energy as the time-varying sound level during that same time period.

[2]The maximum instantaneous sound level, in dBA, observed during this sample period.

Source: Charles M. Salter Associates, Inc.

During the use of impact wrenches (approximately 8 months) the noisiest construction operation, noise levels outside both the Pacific Bell and new office buildings would reach as high as 89 dBA. Maximum noise levels inside the building would be expected to reach about 59 dBA in offices with windows. Pacific Bell does not anticipate any problems at the wire center from construction noise or vibration.[2]

Impact wrench noise would be noticeable (up to 5 dBA over present maximum levels) inside the affected offices and could annoy and distract office workers. The noise of impact wrenches would not interfere with ordinary use of the telephone by these workers.

If windows were opened, the expected exterior/interior noise reduction in the Victorian office building across Second Street from the project site would be approximately 15 dBA. Maximum noise levels inside the buildings during impact wrench use would be expected to reach about 74 dBA. The noise inside these buildings could be expected to annoy and distract office workers and residents. They would have to raise their voices to converse and telephone use would be difficult.

During the remainder of construction, noise levels would not be expected to exceed 65 dBA in the adjacent Folsom Street buildings or 50 dBA inside the Second Street offices fitted with windows. At these noise levels, construction noise would be audible and could interfere with communications in the Folsom Street buildings, but would not be expected to interfere with activities in the Second Street offices.

Noise levels in the interiors of the residences on Folsom Street immediately north of the project site could reach 80-85 dBA during impact wrench use. With windows closed, noise would be about 10 dBA lower. These levels would be irritating to residents. No other residential uses were identified within the impact area of the project. This area is estimated to include locations within 800 feet of the project, based upon a project-generated noise source of 95 dBA, and an attenuation rate of 6 dBA for each doubling of distance.[1] The attenuation rate is applicable to line-of-sight; since there is much shielding in this area, the estimate of the impacted area is quite conservative.

2. Compatibility with the Existing Noise Environment

The Transportation Noise Plan of the Comprehensive Plan of the City and County of San Francisco[3] and Title 25 of the California Administrative Code[4] contain guidelines for determining the compatibility of various land uses with respect to outdoor noise environments. With regard to new office and commercial buildings, in an exterior noise environment of 70-75 dBA, an analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Since nighttime noise control is not important in office buildings, the L_{eq} (defined in Table 15, page 148) during the noisiest daytime hours is the appropriate design parameter. The L_{dn} (day-night average noise level) is equivalent to the L_{eq} during the noisiest daytime hours in noise environments dominated by traffic noise.

An L_{eq} of 45 dBA is considered the upper limit of acceptability for traffic noise in a private or semiprivate office or small conference room where good listening conditions are desired. The L_{dn} inside the proposed offices would be approximately 42 dBA (the L_{eq} inside the office facing Folsom Street), which would be compatible with office uses.[5] The predicted instantaneous maximum levels of up to 58 dBA could interrupt a speaker talking in a normal tone of voice in a small conference room.[5]

Based upon previously collected area data, the maximum noise exposure for the proposed building would be an L_{dn} of about 72 dBA at ground level (see Table 15, page 148). It is therefore required that an analysis of noise reduction and noise insulation features be conducted by a qualified noise consultant prior to the application for the building permit in order to identify design measures that would result in an acceptably quiet indoor environment. With fixed windows, the resulting noise levels in exterior offices would fall below 45 dBA, and would therefore be acceptable.

3. Noise Impacts on Adjacent Land Uses

Post-construction operation of the 299 Second Street office building could affect the existing acoustic environment in the area in three ways: by generating additional traffic in the vicinity, contributing to an increase in overall traffic noise levels, and adding the building's mechanical equipment noise to the existing noise environment.

Traffic generated by the project during any hour of the day would cause noise levels to increase by less than 1 dBA on any of the adjacent streets. A 1 dBA increase in the usual urban environmental noise is undetectable to the human ear.

Although the mechanical equipment to be used at the proposed building has not yet been chosen, the amount of noise that may be emitted by this equipment is regulated by San Francisco's noise ordinance.[6] The noise ordinance requires that noise from mechanical equipment at the proposed building not exceed 60 dBA at the property line of the property affected by the noise emission. This level would be at or below the existing background noise level in the site's vicinity; no increase in noise levels due to mechanical equipment would be expected.

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[1]Charles M. Salter Associates, San Francisco, California, unpublished data, 1979.

[2]Lou Meylan, Engineering Manager, Pacific Bell, telephone communication, May 31, 1984.

[3]City and County of San Francisco, Department of City Planning, Plan for Transportation Noise Control, a section of the Environmental Protection Element, adopted September 19, 1974.

[4]Title 25, California Administrative Code, Section 725-28, e-2.

[5]Data based on noise analysis prepared for Second and Folsom Project FEIR (EE81.18) on pages 90-97.

[6]City and County of San Francisco, Ordinance 274-72, Regulation of Noise, Section 2907.

The ordinance requires that all powered construction equipment, except impact tools and equipment, emit not more than 80 dBA measured at 100 feet (86 dBA at 50 feet). Impact tools and equipment, including pavement breakers and jackhammers, must have both intake and exhaust muffled to the satisfaction of the Director of Public Works. The ordinance further requires a special permit for construction after 8:00 p.m. and before 7:00 a.m.

K. FIRE PROTECTION SERVICES

The proposed project would contribute to the cumulative demand for fire protection services in the downtown area. Said impacts have been analyzed in the Downtown Plan EIR,[1] and are summarized below.

An estimated 21% (7,600) of the City's 36,000 annual fire and non-fire incidents occur in the C-3 District. The number of annual incidents in the C-3 District is expected to increase to approximately 7,800 by the year 2000. The majority of this increase in yearly incidents would be non-fire incidents (e.g., first aid calls, false alarms). The increase in fire incidents from 1984 to 2000 would be less than 1% due to the effectiveness of the San Francisco and State Life Safety code provisions.

Based on these projections, all Fire Department task units would continue to operate within their annual service limits through the year 2000. The Fire Department anticipates that no new equipment or specialized staff would be needed to meet the demands identified. Two additional building inspectors would be required to maintain annual inspection of all downtown highrises.

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[1] Downtown Plan EIR (EE81.3, certified Oct. 18, 1984) at Sections IV.F.6-IV.F.8; IV.F.15-IV.F.19; Comment and Responses, p. F.6; Appendices pp. A-6 and K.10-K.13, which are incorporated by reference herein.

L. GROWTH INDUCEMENT

The project would consist of approximately 267,760 gross square feet (gsf) of office space, 5,580 gsf of restaurant space, 10,000 gsf of retail space, and about 45,735 gsf of parking space, a net gain of approximately 232,760 gsf of office space, 3,630 gsf of restaurant space and 10,000 gsf of retail space.

At full operation, the project would provide about 949 net new permanent jobs, including office, managerial, retail, restaurant and maintenance positions. To the extent that the building is fully leased and the availability of its space does not create permanent vacancies in other Bay Area office buildings, total employment in the Bay Area could increase by another 3,644 permanent jobs through the multiplier effect.

The project would not require new construction or extension of public services or utility systems, and would be built in an already developed urban area. The influx of employees could stimulate employee-oriented retail activity in the proposed project and the project area.

The project's net office space would provide 1.4% additional office space to downtown San Francisco over the period 1984-2000. To the extent that the project would attract new residents or commuters who otherwise would not have been attracted to San Francisco or the Bay Area, the demand for housing and commercial, social and municipal services would be increased. The project would generate a demand for an estimated 207 housing units in San Francisco. Additional demand for housing in the region may also occur. However, the specific locations selected by potential employees working in San Francisco cannot be predicted.

If marketed successfully, the proposed project, together with other planned office/retail development, could have growth-inducing effects by demonstrating a market for office and retail space in this area, thereby stimulating further revitalization of office and retail growth in the South of Market area, and in the Rincon Hill area in particular. This growth could be in response to an increasing demand for office space located in San Francisco's Financial District. This demand would exist whether or not the project is built. As indicated in a report prepared by Coldwell Banker on office vacancies in the downtown areas of 22 U.S. cities, San Francisco's office vacancy rate remains below the national

average.[1] San Francisco's demand for office space continues the trend of growth in the service sector and in office headquarters activities and employment. The increase in downtown office space would contribute to the continued growth of local and regional markets for housing, goods and services.

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[1]Coldwell Banker, Office Vacancy Index of the United States, September 30, 1984.

V. MITIGATION MEASURES THAT WOULD MINIMIZE THE PROJECT'S POTENTIAL IMPACTS

In the course of project planning and design, measures have been identified that would reduce or eliminate potential environmental impacts of the proposed project. Some of these measures have been or would be adopted and implemented by the project sponsor, project architects or contractors and, thus, are proposed as part of the project. Some measures are under consideration and others have been rejected. Implementation of some measures may be the responsibility of public agencies.

A. ARCHITECTURAL AND HISTORIC RESOURCES

MITIGATION MEASURE INCLUDED AS PART OF PROJECT

Should evidence of significant cultural or historic artifacts be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist or other expert to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction that might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

B. TRANSPORTATION

MITIGATION MEASURES INCLUDED AS PART OF PROJECT

- Within a year of the project's full occupancy, the project sponsor would conduct a survey, in accordance with methodology approved by the Department of City Planning, to assess actual trip generation patterns of project occupants and

actual pick-up and drop-off areas for carpools and vanpools. The project sponsor would make this survey available to the Department. This measure would provide needed information to aid in transportation planning within the City. Alternatively, at the request of the Department, the sponsor would provide a fair and equitable in-lieu contribution toward an overall transportation survey for the downtown area to be conducted by the City.

- o During the construction period, construction truck movement would be permitted only between 9:00 a.m. and 4:00 p.m. to minimize peak-hour traffic conflicts. The project sponsor and construction contractor would meet with the Traffic Engineering Division of the Bureau of Engineering of the Department of Public Works, the Fire Department, Muni and the Department of City Planning to determine feasible traffic mitigation measures to reduce traffic congestion during construction of this project and other nearby projects.

- o To minimize cumulative traffic impacts due to lane closures and street excavation during construction, the project sponsor would coordinate with construction contractors for any concurrent nearby projects that are under construction, planned for construction, or later become known.

- o Building directories and signs for the service elevators would be placed in the loading area.

- o Secure, safe bicycle storage facilities would be provided relative to the demand generated by the project for commuters and short-term visitors, if demand for such storage facilities is greater than the number required by code.

- o The placement of paving, landscaping or structures in the sidewalk area (subject to City approval) would be done in such a way as to minimize interference with pedestrian traffic.

- o Off-street parking spaces would be controlled to assure priority for vanpool and carpool vehicles and vehicles driven by the physically handicapped. All remaining parking spaces would be subject to rates that encourage an appropriate mix of long- and short-term use of said spaces.

- o The sponsor would be required to pay a one-time Transit Impact Fee to finance the increased cost of Muni services necessitated by the project, at the rate of $5 per gross square foot of new construction. Based on the $5 rate, the project would yield about $1,163,800.

- o The project sponsor would, in consultation with the Municipal Railway, install eyebolts or make provisions for direct attachment of eyebolts for Muni trolley wires on the proposed building wherever necessary or agree to waive the right to refuse the attachment of eyebolts to the proposed building if such attachment is done at City expense. (Public Utilities Commission Resolution No. 81-0093).

MITIGATION MEASURE NOT INCLUDED IN THE PROJECT

- o Pacific Gas and Electric Company would coordinate work schedules with other utilities requiring trenching, so that street disruption would take place during weekends and off-peak hours. This would be done through the San Francisco

Committee for Utility Liaison on Construction and Other Projects (CULCOP). This measure is outside the jurisdiction of the sponsor and would be implemented by CULCOP.

C. AIR QUALITY

MITIGATION MEASURES INCLUDED AS PART OF PROJECT

- Measures to reduce traffic volumes or congestion would also reduce air pollutant emissions. These include encouragement of transit use by employees; flexible work hours; and preferential parking for carpools, vanpools and bicycles. Also, construction vehicle traffic would be prohibited during peak traffic hours.

- The California Health and Safety Code requires that demolition materials and soils be watered to minimize dust generation. An effective watering program (complete coverage twice daily) can reduce emissions by about 50%. The project sponsor would require the contractor to implement a twice-daily watering program, which would reduce airborne construction dust and particulates by about 50% and reduce the likelihood of exceeding the state and federal standards.

D. NOISE

MITIGATION MEASURES INCLUDED AS PART OF PROJECT

- Techniques that would be incorporated to minimize construction noise impacts include: locating fixed noise sources, such as concrete pumpers, portable air compressors, portable generators, and pumps as far as possible from existing land uses, particularly office buildings and residences; and erecting noise barriers around sidewalks and in pit areas where possible. A solid 8-to-10-foot plywood fence would be erected around the construction perimeter to reduce the project's impact on ground-level noise in the area.

- The sponsor would notify all offices and residents within 100 feet of the project of the times and days of construction activity. This would allow businesses and individuals, to the extent necessary and possible, to adjust their schedules around the construction activity.

- If significant noise problems are identified by the residents of the six-unit building on Folsom Street, east of the site, temporary noise shields could be placed over windows of residential units.

- An acoustical analysis would be prepared under the supervision of a person experienced in the field of acoustical enginering detailing the reduction requirements of the project. Necessary noise insulation features would be included in the project design. In order to ensure compliance with the Master Plan, a copy of this report would be submitted with the building permit application.

- The construction contract would specify that the contractor muffle equipment so that noise levels would not exceed the limits stated in the City Noise Ordinance (Article 29, San Francisco Administrative Code, 1972).

- Both intake and exhaust tools and equipment would be muffled to the satisfaction of the Director of Public Works.

E. ENERGY

MITIGATION MEASURE NOT INCLUDED AS PART OF PROJECT

- The project sponsor has not reached any formal decisions concerning mitigation measures for energy consumption.

  Potential mitigation measures are under consideration as part of the design process and could include, but not necessarily be limited to, the following:

  - increased use of daylighting
  - passive solar features
  - load shedding
  - individual fan units on each floor
  - parabolic lighting
  - high-efficiency ballasts for fluorescent lighting
  - high-efficiency motors
  - computerized energy management
  - fluorescent lighting (wattmisers) using two bulbs per fixture instead of four
  - energy-efficient outdoor lighting
  - variable air volume space conditioning system.

  Final decisions would be made on the basis of life cycle costing and compatibility with the overall design; a separate report would be prepared and made available to the Department of City Planning prior to issuance of the building permit. That report would explain the decisions regarding which energy conservation features would be included in the final design.

F. HOUSING

MITIGATION MEASURE INCLUDED AS PART OF PROJECT

- The City Planning Commission's Office Housing Production Program (OHPP) stipulates mitigation of housing impacts. The office portion of the project is estimated to add demand for 207 housing units. The project sponsor would fulfill the OHPP requirements by complying with the provisions of the program. The OHPP program allows units or "credits." Credits are given on a two- (or more) for-one basis for moderate- or low-income units. Multiple credits are allowed under the OHPP Guidelines for these units to "promote and stimulate the production of affordable housing" in the face of "economic considerations which dictate that economic incentives be given" for this purpose. The use of credits

generally results in fewer units than the demand projected, while the units thus produced tend to be in the more affordable range or larger units. The City Planning Commission would determine whether proposed measures would mitigate housing demand caused by the project.

G. CLIMATE

MITIGATION MEASURE INCLUDED AS PART OF PROJECT

- The current design utilizes multiple setbacks and a tapered design, two design features known to generally reduce ground-level wind acceleration.

MITIGATION MEASURE NOT INCLUDED AS PART OF PROJECT

- Within the outdoor eating area, winds are predicted to range from 2.3 to 6.6 mph depending on the wind direction. Because outdoor eating is particularly sensitive to wind, some additional wind protection in the form of screens, plantings, etc. is advisable to keep winds below 5 mph. The project sponsor has not reached a formal decision concerning this measure.

H. WATER

MITIGATION MEASURE INCLUDED AS PART OF PROJECT

- During excavation, the project contractor would mechanically sweep streets adjacent to the site to prevent siltation of storm drains. The contractor would construct catchment basins on-site to trap silt and debris for later transport to dumps.

I. HAZARDS

MITIGATION MEASURE INCLUDED AS PART OF PROJECT

- An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to ensure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance of final building permits by the Department of Public Works.

J. GEOLOGY/TOPOGRAPHY

MITIGATION MEASURES INCLUDED AS PART OF PROJECT

- The project sponsor would obtain a site-specific soils report froma California-licensed soils engineer or geologist and construct the project in accordance with the recommendations of that report regarding foundation and structure. Should dewatering be necessary, the final soils and foundation report shall address the potential settlement and subsidence impats of dewatering of the site. Based upon this discussion the report shall contain a determination as to whether or not a lateral movement and settlement survey should be done to monitor any horizontal or vertical movement of surrounding buildings and adjacent streets. If a monitoring survey is recommended, the Department of Public Works will require that a Special Inspector (as defined in Article 3 of the Building Code) be retained by the project sponsor to perform this monitoring. If, in the judgment of the Special Inspector, unacceptable movement were to occur during dewatering, groundwater recharge would be used to halt this settlement. Costs for the survey and any necessary repairs to service under the street would be borne by the contractor.

- During excavation, shoring and bracing would be used to reduce soil movements beneath adjacent structures and streets. If necessary, the excavation would be kept dry by sump pumping as required rather than through the use of dewatering wells. This would prevent consolidation of soils supporting adjacent structures and would avoid exposing nearby wooden foundations to dry rot.

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED

No project-specific significant impacts have been identified. Mitigation measures included as part of the project are described in Chapter V., Mitigation Measures, page 155.

Cumulative development in Downtown San Francisco would have a significant effect on the environment in that it would generate cumulative traffic increases as well as cumulative passenger loadings on Muni, BART and other regional transit carriers. These cumulative transportation impacts could cause violations to total suspended particulate (TSP) and localized carbon monoxide (CO) standards in San Francisco with concomitant health effects and reduced visibility. The proposed project would contribute to these cumulative effects.

The chapter is subject to final determination by the City Planning Commission as part of their certification process. Chapter VI. of the Final EIR will be revised, if necessary, to reflect findings of the Commission.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

This chapter identifies alternatives to the proposed project, discusses their environmental impacts, and states the reasons why they were rejected by the sponsor in favor of the project.

A. ALTERNATIVE ONE: NO PROJECT

1. Description

This alternative would involve no change to the project site as it now exists. The two buildings and parking lots would remain in use for an unspecified length of time. This alternative would not preclude future options for development of the site.

2. Impacts

With the retention of the project site in its present state, none of the impacts associated with the proposed 299 Second Street project would occur. The existing wind, shadow, and visual effects of the structures would remain unchanged. The existing transportation and air quality conditions would continue on streets around the site.

The peak-hour level of service on the streets would remain unchanged and Muni load effects would be slightly lower than if the proposed project were implemented. Current levels of parking demand, noise, air pollution, and energy consumption, would not change as a result of the project, but could be subject to cumulative impacts associated with other planned development in the project vicinity.

3. Reasons for Rejection

The project sponsor rejected this alternative because none of the development objectives would be met. The project aponsor also believes that this alternative underutilizes scarce

land resources in an area that supports the downtown area. The site, in the project sponsor's opinion, is a prime location for the project.

B. ALTERNATIVE TWO: MIXED-USE WITH RESIDENTIAL

1. Description

This alternative would consist of a 16-story, 200-foot building constructed on the same lots as the proposed project. Transferable Development Rights (TDRs) would be used. The building would contain open-space amenities similar to those of the project, and conform to appropriate open space provisions of the Interim Controls. The exterior design would not differ significantly in color, construction materials or form from the proposed project.

Total gross floor area for this alternative would be 345,500 gsf, including the restaurant/retail and office portions of the project.

Up to 5,000 gsf of each ground-level use (retail/restaurant) not to exceed 75% of general floor uses plus ground floor open space would be excluded in the FAR calculations as specified in the Interim Controls for the C-3-O(SD) district.

Approximate square footages for each use are as follows:

Retail/Restaurant: 8,500 gsf (street/mezzanine levels)
Office: 200,000 gsf (2nd - 11th floors)
Housing: 77,000 gsf (12th floor-penthouse; 154 units at 500 gsf each)
Parking: 60,000 gsf on two basement levels (171 spaces).

Section 215(a) of the Planning Code permits a density of one dwelling unit per 125 square feet of lot area in a "C" (commercial) district. The project site, at 30,890 gsf, would yield a total of 247 units under the maximum allowable density. This alternative represents, in the sponsor's opinion, dwelling units with minimum reasonable floor area, rather than maximum permissible housing density, resulting in a total of 154 units.

Three loading docks and two service vehicle spaces would also be included in this alternative, the same as the project. Parking in excess of 24,185 sq.ft. (7% of the total gross square feet of the project) of the amount permitted under Section 102.8(b)7 of the Interim Controls would require Conditional Use authorization, and would be included in the FAR calculation.

This alternative would have 45% less restaurant/retail space, and 25% less office space than the proposed project. The FAR for this alternative would be 10.2:1 (not including that portion of the restaurant/retail square footage permitted for exclusion from the FAR calculation).

2. Impacts

Visual, shadow, wind, architectural and historical, and noise impacts would be about the same as for the proposed project.

This alternative would generate 26% fewer new daily trips and 33% fewer new p.m. peak-hour outbound trips than the proposed project. About 112 of the peak-hour trips would be by auto, 77 on Muni, 72 on BART, 52 on other transit carriers, and 82 by other modes (including walking). The 112 auto trips would increase nearby intersection traffic by 2-3% and would not be measurable within typical daily traffic fluctuations. This alternative would add about 0.1-0.3% to the total projected downtown Muni patronage levels; this increase would not be discernable by Muni patrons. With this alternative, peak-hour BART patrongage would increase by about 0.2%, and load factors would not be measurably increased. This alternative's total parking demand would be about 160 spaces, 14 less than the proposed project.

This alternative would generate 147 units under OHPP's housing requirement, 60 less than the proposed project. This alternative, by including residential units, would increase the housing stock in San Francisco and satisfy the OHPP requirement by producing 154 units.

Regional air quality impacts would be slightly less than for the proposed project; local air quality would be about the same. Energy consumption would be increased. Employment-related impacts of this alternative would be less than for the proposed project, because

the overall reduction in office gross floor area would provide fewer jobs. At full operation this alternative would provide about 787 permanent jobs, 265 less than the proposed project. These include approximately 727 office workers (at one employee for each 275 gsf of office space), 24 restaurant/retail workers (one per 350 gsf of space), 24 janitorial/service workers (at one per 12,000 gsf of building area), and 12 parking operators (at one per 5,100 gsf of parking).

3. Reasons for Rejection

This alternative was rejected by the project sponsor because it would not meet the objectives of maximizing the site's potential by developing a mixed-use retail and office project. In addition, residential development is proposed as a major component of the plan for the Rincon Hill area, which is located within two blocks east of the project site.

C. ALTERNATIVE THREE: MIXED-USE WITH LIGHT INDUSTRIAL

1. Description

This alternative would consist of a 12-story, 140-foot high building with a total floor area of about 185,160 gsf, with about 30,000 gsf of light industrial space, 155,160 gsf of offices, and 12,960 gsf of parking (7% of the total gross floor area). The FAR would be 6:1. No TDRs would be included in the project. The building's exterior design would be simpler at the lower levels as there would be no arcade, open spaces, or greenhouses. However, like the proposed project, this alternative would contain a penthouse and a peaked-roof design.

Light industrial uses would occupy the Clementina, Second and Folsom Street levels, with offices from the second floor through the penthouse. Light industrial uses would involve final testing and assembly of computer components, as well as research and design facilities. One level of basement parking would also be accessed from Clementina Street. Three loading docks would be included in the design.

2. Impacts

Visual, shadow and wind impacts would be reduced proportionately as the building would be 60 feet shorter than the 200-foot proposed project. Architectural, historical and noise

impacts would be the same as for the proposed project. Applying the OHPP formula for computing the housing requirement, this alternative would generate a requirement for 107 housing units, 100 fewer than the 207 calculated for the proposed project.

Eliminating retail/restaurant uses, adding light industry, and reducing office space would generate lower levels of employee-related impacts, traffic generation, parking and transit demand. Air pollution and energy consumption impacts would depend on the specific nature of the light industrial use, but would be expected to be slightly higher than the proposed project due to the increased use of machinery on the project site.

This alternative would generate 65% fewer new daily trips and 55% fewer new p.m. peak-hour outbound trips than the proposed project. About 89 of the peak-hour trips would be by auto, 56 on Muni, 56 on BART and 21 pedestrian trips. The 89 auto trips would increase nearby intersection traffic by 1-2% and would not be measurable within typical daily traffic fluctuations. This alternative's Muni trips would add about 0.1-0.2% to the total projected downtown patronage levels; this increase would not be discernable by Muni patrons. With this alternative, peak-hour BART patronage would increase by about 0.1%. Load factors would not measurably increase. The alternative's total parking demand would be about 100 spaces, about 74 fewer than the proposed project.

3. Reasons for Rejection

The project sponsor has rejected this alternative because it would not meet the development objectives of providing a mixed-use retail and office building with a proportionate amount of parking. Due to incompatibility of light-industrial uses, this alternative would preclude development of on-site street and mezzanine retail and restaurant uses. Light industrial uses would not be compatible with planned developments or developments currently under construction in the project vicinity. This alternative was also rejected because office lease rates would have to be increased to support the light industrial uses, thereby reducing marketability of office space.

D. ALTERNATIVE FOUR: NO EXCEPTIONS TO THE DOWNTOWN PLAN

1. Description

This alternative would consist of a 16-story, 200-foot building with office, restaurant, and retail spaces that would respond to amendments to the Planning Code to implement the Downtown Plan and feature many of the bulk, setback, design and other building characteristics of the proposed project. No Transferable Development Rights would be used.

The base FAR for this alternative would be 6:1. Total gross floor area would be 195,340 gsf, with 180,340 gsf of office space, 9,500 gsf of retail, 5,500 gsf of restaurant space and 12,974 gsf of parking (7% of total gross floor area). Ground floor retail and restaurant space totalling 10,000 gsf could be excluded from FAR calculations pursuant to Section 102.8(b)13 of the Interim Controls.

2. Impacts

Visual, shadow and wind impacts would be reduced proportionately as the upper portions of the building would be more slender (approximately 46% less gross floor area per floor in floors 4 through 15) than the proposed project. Architectural, historical and noise impacts would be the same as for the proposed project.

Applying the OHPP formula for computing the housing requirement, this alternative would generate 120 housing units, 87 fewer than the 207 calculated for the proposed project.

This alternative would generate 27% fewer new daily trips and 29% fewer new p.m. peak-hour outbound trips than the proposed project. About 91 of the peak-hour trips would be by auto, 63 on Muni, 60 on BART, 41 on other transit carriers and 79 by other modes (including walking). The 91 auto trips would increase nearby intersection traffic by about 2% and would not be measurable within typical daily traffic fluctuations. This alternative would add about 0.1-0.3% to the total projected downtown Muni patronage levels; this increase would not be discernable by Muni patrons. With this alternative, peak-hour BART patronage would increase by about 0.1%, and load factors would not be measurably

increased. This alternative's total parking demand would be about 122 spaces, 52 less than the proposed project.

Regional air quality impacts would be slightly less than for the proposed project; local air quality would be about the same. Energy consumption would be decreased. Employment-related impacts of this alternative would be less than for the proposed project, because the overall reduction in office gross floor area would provide fewer jobs. At full operation, this alternative would provide about 717 permanent jobs, 336 less than the proposed project. These include approximately 656 office workers (at one employee for each 275 gsf of office space), 43 restaurant/retail workers (one per 350 gsf of space), 15 janitorial/service workers (at one per 12,000 gsf of building area), and 3 parking operators (at one per 5,100 gsf of parking).

3. Reasons for Rejection

This alternative was rejected by the project sponsor because it would not meet the objectives of maximizing the site's potential by developing a first-class mixed-use retail and office project through the use of Transferable Development Rights. In the sponsor's opinion, use of TDRs to allow additional office space would be the only economically feasible way to provide ground floor uses and other amenities that are typical of first-class mixed-use projects.

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Urban Research Association
312 Sutter Street
San Francisco CA 94108

David Jones
San Franciscans for Reasonable Growth
241 Bartlett
San Francisco, CA 94110

Frank Noto
San Francisco Forward
375 Sutter Street, #400
San Francisco, CA 94108

Tony Kilroy
San Francisco Tomorrow
942 Market Street, Room 505
San Francisco, CA 94102

John Sanger & Associates
3600 Washington St.
San Francisco, CA 94118

Senior Escort Program
South of Market Branch
814 Mission Street
San Francisco, CA 94103

Becky Evans
Sierra Club
530 Bush Street
San Francisco, CA 94108

Robert Snook
Wells Fargo Bank
475 Sansome Street 19th Floor
San Francisco, CA 94111

South of Market Alliance
74 Langton Street
San Francisco, CA 94103

Square One Film & Video
725 Filbert St.
San Francisco, CA 94133

Wayne Stiefvater
Appraisal Consultants
701 Sutter Street, 2nd Floor
San Francisco, CA 94109

John Elberling
TODCO
230 Fourth Street
San Francisco, CA 94103

Rod Teter
Cahill Construction Co.
425 California Street, Suite 2300
San Francisco, CA 94104

Jerry Tone, Loan Officer
Real Estate Industries Group
Wells Farge Bank, N.A.
475 Sansome Street, 19th Floor
San Francisco, CA 94111

Timothy Tosta
333 Market Street, #2230
San Francisco, CA 94105

Jeff Vance
Campeau Corporation
681 Market Street
San Francisco, CA 94105

GROUPS AND INDIVIDUALS (Cont.)

Kathy Van Velsor
19 Chula Lane
San Francisco, CA 94114

Stephen Weicker
899 Pine Street, #1610
San Francisco, CA 94108

Calvin Welch
Council of Community Housing
Organizations
409 Clayton St.
San Francisco, CA 94117

Howard Wexler
235 Montgomery 27th Floor
San Francisco, CA 94104

Eunice Willette
1323 Gilman Ave
San Francisco, CA 94124

Leslie Yee
1531 Powell Street
San Francisco, CA 94133

Marie Zeller
Whisler-Patri
590 Folsom Street
San Francisco, CA 94105

South of Market Association
E.O.C. Office
1173 Mission St.
San Francisco, CA 94103

ADJACENT PROPERTY OWNERS

KSW Properties
244 California Street
San Francisco, CA 94111

Walter Gruenwald
c/o Gruenwald Realty
3410 Geary Blvd.
San Francisco, CA 94118

Solzer/Hail 1982 Family Trust
c/o William & Joy Hail
11 Beaconsfield Court
Orinda, CA 94563

Marathon Development
595 Market Street, #1330
San Francisco, Ca 94105

Jack L. Grillo, Inc.
501 Army St., #100C
San Francisco, CA 94124

Fritzi Realty
199 First Street
San Francisco, CA 94105

Marcell & John Bier
116 Cherry Street
San Francisco, CA 94118

United California Bank
Realty Corp.
600 South Spring St , #16
Los Angeles, CA 90014

E. Harbold Enterprises Inc.
Evelyn D. Harbold
2207 Cipriani Blvd
Belmont, CA 94002

DEPARTMENT OF CITY PLANNING 450 McAllister St. - 5th Floor
(415)558-5260

NOTICE THAT AN ENVIRONMENTAL IMPACT REPORT IS DETERMINED TO BE REQUIRED

Date of this Notice: February 10, 1984

Lead Agency: City and County of San Francisco, Department of City Planning
450 McAllister St. - 5th Floor, San Francisco CA 94102

Agency Contact Person: Jim McCormick **Tel:** (415) 558-5260

Project Title: 299 Second Street
83.311E

Project Sponsor: Prometheus Development Co.

Project Contact Person: Stephen Koch

Project Address: 299 Second Street

Assessor's Block(s) and Lot(s): 3736/27,29,35

City and County: San Francisco

Project Description: Construct an 11-story building containing approximately 206,000 gross square feet of offices over 10,000 gsf of ground floor retail space and two levels of below-grade parking for 118 automobiles; after demolition of one two-story and one three-story commercial building and replacement of surface parking for about 82 automobiles.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15081 (Determining Significant Effect), 15082 (Mandatory Findings of Significance) and 15084 (Decision to Prepare an EIR), and the following reasons, as documented in the Initial Evaluation (initial study) for the project, which is on file at the Department of City Planning:

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: February 21, 1984.

An appeal requires 1) a letter specifying the grounds for the appeal, and 2) a $35.00 filing fee.

Alec S. Bash

Alec S. Bash, Environmental Review Officer

APPENDIX A

FINAL INITIAL STUDY
299 SECOND STREET
NO. 83.311E
February 10, 1984

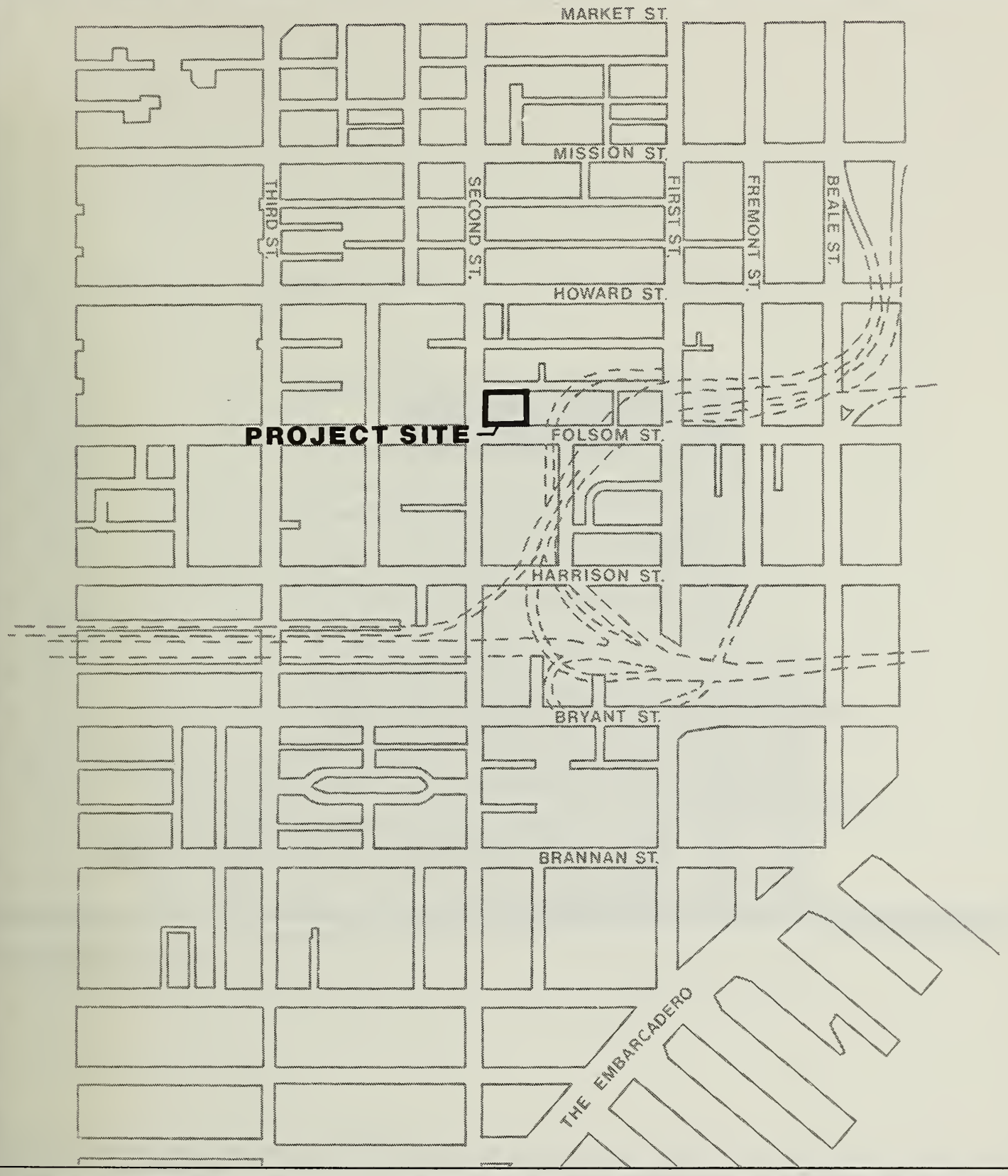
I. PROJECT DESCRIPTION

The proposed 299 Second Street project would be a mixed-use development containing office space, ground-level retail space and parking. The project site is on Assessor's Block 3736, Lots 27, 29 and 35 and contains approximately 30,860 square feet. The site is in the South of Market area on the northeast corner of Second and Folsom Streets and south of Clementina Street (Figure 1, page 2). It is in the C-3-S (Downtown Support) district and a 320-I height and bulk district. Permitted Floor Area Ratio (FAR) is 7:1.

Lots 29 and 27 contain a three-story concrete office building and a two-story wood-frame building containing offices above a ground-floor restaurant. Office uses in the two buildings total 35,000 gross square feet. There are also 52 marked parking spaces on Lot 29, and 30 spaces located partially on Lot 35 and partially on the northeastern portion of Lot 27 abutting Lot 35. Both lots are accessed from Clementina Street. The three-story concrete building (580-590 Folsom), formerly the Bothin Realty Building, and the two-story building at 596 Folsom Street, have been rated "C" by the expanded architectural survey by Heritage.[1] Both of these buildings would be demolished.

The project sponsor, Prometheus Development Company, proposes to construct an 11-story office building with ground-level retail space and parking. The new structure including office, retail and a mechanical penthouse would contain approximately 216,000 gross square feet (gsf). Of this area about 10,000 gsf would be used for retail and 206,000 gsf would be used for office space. There would be two levels of parking for 118 automobiles totaling about 45,000 square feet of floor area (Figures 2, 3 and 4, pages 3, 4 and 5). TDRs (Transferable Development Rights) as suggested in the Downtown Plan for this area would be included as part of the project if they are adopted by the City. TDRs could increase permitted densities for this site. An alternative including TDRs will be analyzed in the EIR.

The proposed project would provide 2 loading spaces on Clementina Street. Pedestrian access to the building would be from Clementina Street and from a diagonal corner entrance at Folsom and Second Streets.

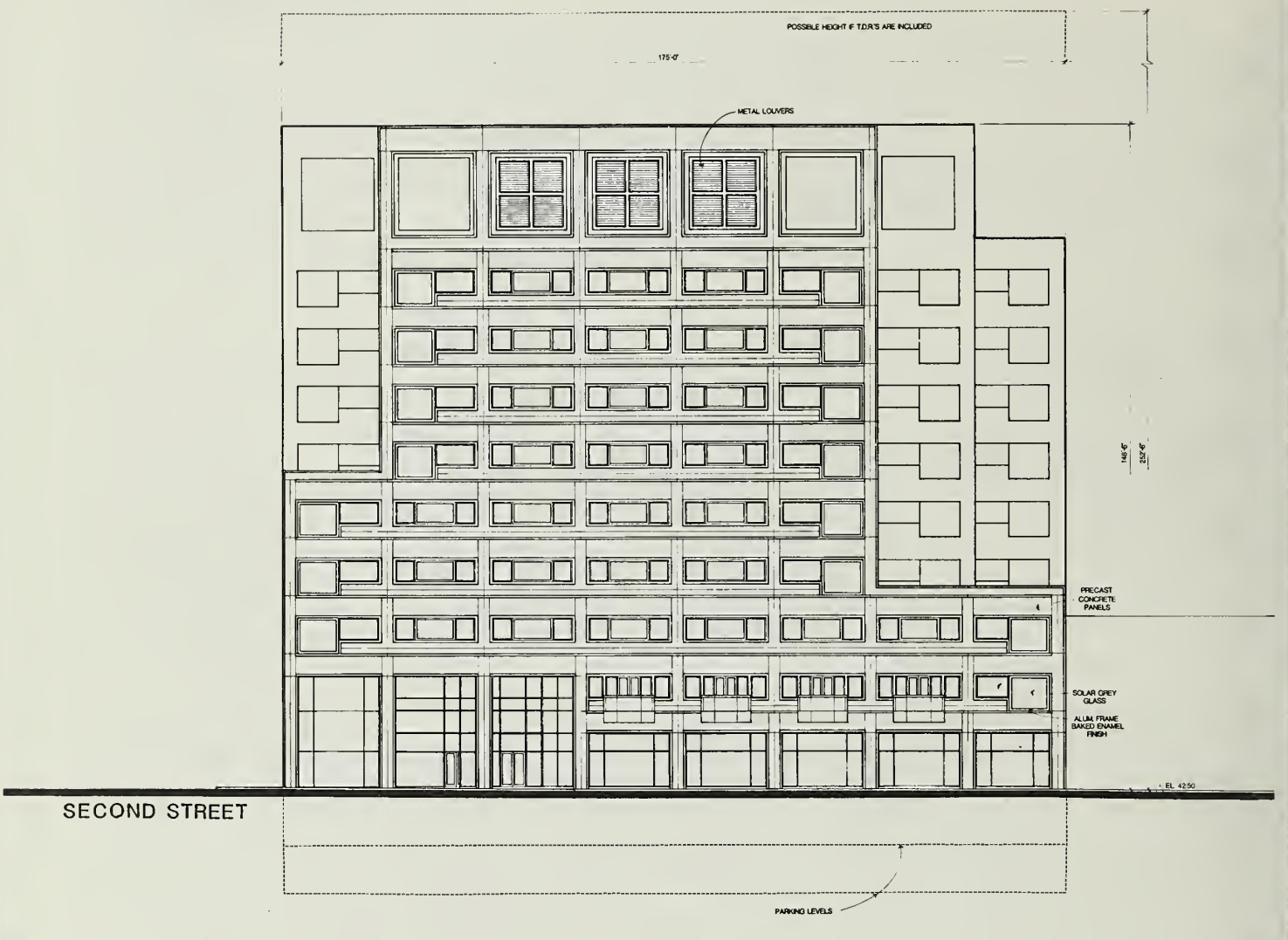


SCALE 0 500 1000 2000 FEET

SOURCE: EIP CORPORATION

SITE LOCATION

1

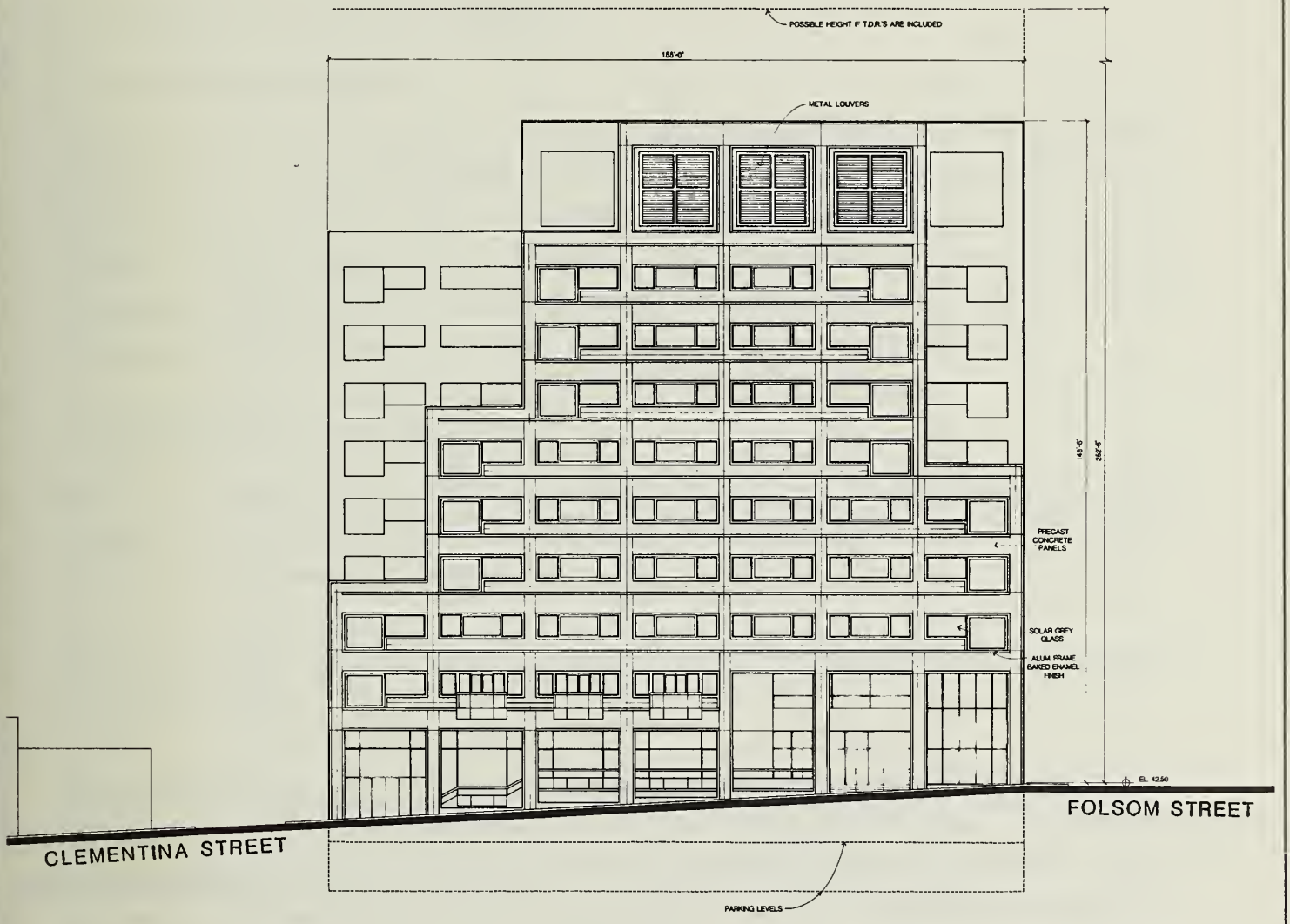


SCALE 0 10 20 40 FEET

SOURCE: WHISLER-PATRI

SOUTH ELEVATION

2

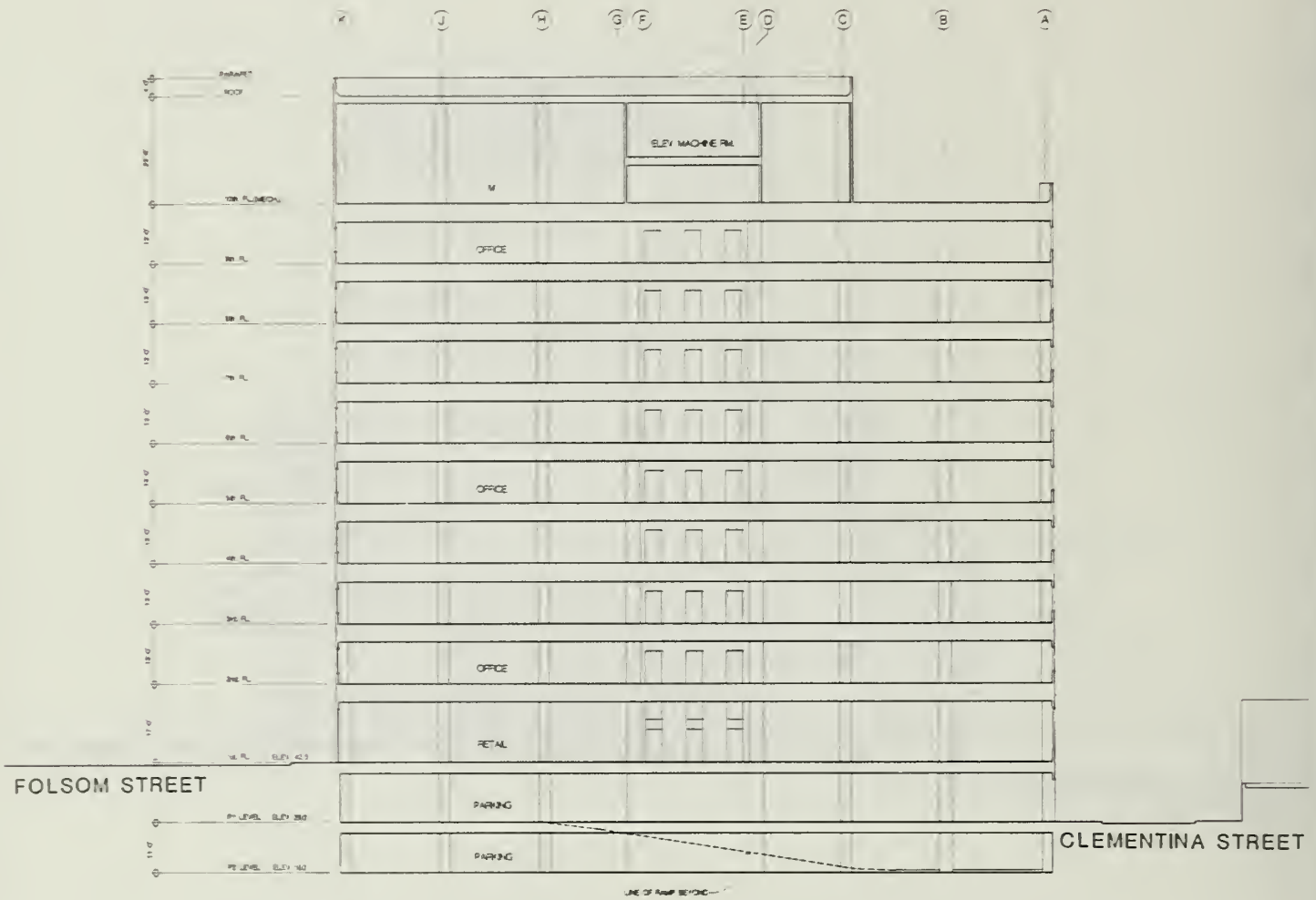


SCALE 0 10 20 40 FEET

SOURCE: WHISLER -PATRI

WEST ELEVATION

3



SCALE 0 10 20 40 FEET

SOURCE: WHISLER-PATRI

SECTION 4

The project architect is Whisler-Patri of San Francisco.

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[1]Foundation for San Francisco's Architectural Heritage, San Francisco Downtown Architectural Survey: C-3 Zoning District Final Evaluated List, December 1, 1982 (an update of Splendid Survivors). Heritage is a non-profit volunteer historic preservation organization that has identified and documented significant San Francisco buildings.

II. SUMMARY OF POTENTIAL EFFECTS

A. SIGNIFICANT EFFECTS

The 299 Second Street project is examined in this Initial Study to identify its potential effects on the environment. Some of the impacts which would be generated by the proposed project could be potentially significant. Potential impacts which require further analysis in an EIR include land use; urban design; housing demand; transportation and circulation; construction noise; shadow and wind patterns; cumulative air quality effects; energy demand; architectural resources; and cumulative fire protection services.

B. INSIGNIFICANT EFFECTS

Some environmental effects would either be insignificant or would be mitigated through measures incorporated into the project design. These require no environmental analysis and will not be addressed in the EIR.

Operational Noise: After completion, the project would not perceptibly increase noise in the project vicinity.

Odors/Burning of Materials and Project-Related Air Quality/Climate: Construction and operation of the proposed project would not create objectionable odors, nor would the project involve burning any materials. Project operation would not violate any ambient air quality standard, expose any sensitive receptors to air pollutants or create any objectionable odors. The issues of cumulative air quality impacts and wind and shadows will be discussed in the EIR.

Biology: The project would have no effect on plant or animal life because the site is currently covered by buildings.

Geology/Topography: Dewatering may be required. The project sponsor has included mitigation measures addressing this activity. A geotechnical report will be prepared by a California licensed soils engineer. Building construction will conform to the recommendations in that report.

Water: The site is currently covered by buildings and has no surface water. Alterations to drainage patterns, therefore, will not be discussed in the EIR.

Utilities/Public Services: Increased demand for public services and utilities attributable to the proposed project would not require additional personnel or equipment.

Hazards: The proposed project would not be affected by hazardous uses nor would it cause health hazards. An evacuation and emergency response plan would be developed by the project sponsor as part of the project.

Cultural: Project excavation would occur in previously disturbed soils. Because the project site is beyond the old San Francisco shoreline, the potential for encountering cultural resources during construction would be limited. The project sponsor has included a mitigation measure addressing this improbable impact.

III. ENVIRONMENTAL SETTING

A. COMPATIBILITY WITH EXISTING ZONING AND PLANS

Could the project:

		Yes	No	Discussed
1.	Require a variance, special authorization, or change to the City Planning Code or Zoning Map?	X	___	X
*2.	Conflict with the Comprehensive Plan of the City and County of San Francisco?	___	X	X
*3.	Conflict with any other adopted environmental plans and goals of the City or Region?	___	X	___

The project would be subject to Discretionary Review by the City Planning Commission. The compatibility of the proposed project with specific goals in the Comprehensive Plan will be discussed in the EIR.

B. ENVIRONMENTAL EFFECTS

	Yes	No	Discussed
1. Land Use. Could the project:			
*a. Disrupt or divide the physical arrangement of an established community?	___	X	X
b. Have any substantial impact upon the existing character of the vicinity?	___	X	X

The project site is located in the C-3-S (Downtown Support) district and a 320-I height and bulk district. The project area, on the periphery of the downtown business district in the South of Market area, contains high-rise buildings, wholesale/storage and commercial home and business services. The project would not vacate any streets, alleys, or other access ways between portions of the downtown.

The proposed mixed-use office and retail project, along with other proposed projects in the immediate area, could contribute to an increase in the scale, density and alteration in the type of land uses. This matter will be further discussed in the EIR.

	Yes	No	Discussed
2. Visual Quality. Could the project:			
*a. Have a substantial, demonstrable negative aesthetic effect?	___	X	X
b. Substantially degrade or obstruct any scenic view or vista now observed from public areas?	___	X	X
c. Generate obtrusive light or glare substantially impacting other properties?	___	X	___

The EIR will discuss potential visual impacts of the project. A building the size of the proposed project would be smaller than those constructed recently in the C-3-S area but larger than most older warehouse and office

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* Derived from State Environmental Guidelines, Appendix G, normally significant impacts.

buildings. Its relationship to the Urban Design Element of the Comprehensive Plan and the scale of surrounding buildings would be discussed in the EIR.

3. Population. Could the project:	Yes	No	Discussed
*a. Induce substantial growth or concentration of population?	___	X	X
*b. Displace a large number of people (involving either housing or employment)?	___	X	X
c. Create a substantial demand for additional housing in San Francisco, or substantially reduce the housing supply?	___	X	X

596 Folsom is a two-story office building with a ground-level restaurant. To the east, at 580-590 Folsom, there is a three-story office building. As these two buildings would be demolished to accommodate the proposed project, these businesses and residents would be displaced. Employment, growth inducement and housing demand will be analyzed in the EIR.

4. Transportation/Circulation. Could the project:	Yes	No	Discussed
*a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system?	X	___	X
b. Interfere with existing transportation systems, causing substantial alterations to circulation patterns or major traffic hazards?	___	X	X
c. Cause a substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity?	X	___	X
d. Cause a substantial increase in parking demand which cannot be accommodated by existing parking facilities?	X	___	X

A project of this size could also add incrementally to the cumulative demand for transit, parking and existing transportation systems. All of the above matters will be discussed in the EIR.

5. Noise. Could the project:	Yes	No	Discussed
*a. Increase substantially the ambient noise levels for adjoining areas?	___	X	X
b. Violate Title 25 Noise Insulation Standards, if applicable?	___	X	___
c. Be substantially impacted by existing noise levels?	___	X	X

The project would contain a parking facility and loading spaces at the rear of the site off Clementina Street. However, there would be no noticeable increase in noise levels associated with project-related traffic as the noise environment of the area is dominated by traffic noise from the Embarcadero Freeway. The downtown San Francisco noise environment is dominated by vehicular traffic noise. The Environmental Protection Element of the San Francisco Comprehensive Plan indicated an existing day-night average noise level (Ldn) of 75 dBA on Folsom Street in 1974; additionally, the project is approximately 250 feet west of ramps to the Embarcadero Freeway which are identified in the Element has having noise levels in excess of 80 dBA. The Environmental Protection Element contains guidelines for determining the compatibility of land uses with various noise environments. For office uses, the guidelines recommend no special noise control measures in an exterior noise environment up to an Ldn of 70 dBA. For 75 dBA and greater noise levels, the guidelines recommend an analysis of noise reduction requirements and inclusion of noise insulation features in the building design. The project sponsor has indicated that noise insulation measures would be included as part of the design (see page 19).

Noise would not perceptibly exceed existing levels after building completion. Traffic generated by the building would increase traffic noise by less than one dBA. A one dBA increase in environmental noise is imperceptible to the untrained human ear.

Mechanical equipment for building operation would be regulated by San Francisco Noise Ordinance 2909 which limits noise at the property line to 70 dBA from 7 a.m. to 10 p.m. and 60 dBA from 10 p.m. to 7 a.m.

Construction would raise noise levels in the surrounding vicinity even though a preliminary soils report determined that pile driving would not be necessary. Construction noise will be further addressed in the EIR.

6. Air Quality/Climate. Could the project:	Yes	No	Discussed
*a. Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation?	___	X	X
*b. Expose sensitive receptors to substantial pollutant concentrations?	___	X	X
c. Permeate its vicinity with objectionable odors?	___	X	___
d. Alter wind, moisture or temperature (including sun shading effects) so as to substantially affect public areas, or change the climate either in the community or region?	X	___	X

No sensitive receptors would be exposed to pollution concentrations. Construction activities would generate dust emissions from the action of wind over exposed earth surfaces. Such emissions would be reduced by about 50% by watering exposed earth surfaces at least twice a day (see page 20 of Mitigation Measures).

Air quality impacts due to project-generated traffic, building operation, cumulative development and project-related localized wind and shadow impacts will be discussed in the EIR.

7. Utilities/Public Services. Could the project:	Yes	No	Discussed
*a. Breach published national, state or local standards relating to solid waste or litter control?	___	X	___
*b. Extend a sewer trunk line with capacity to serve new development?	___	X	X
c. Substantially increase demand for schools, recreation or other public facilities?	___	X	___
d. Require major expansion of power, water, or communications facilities?	___	X	X

The project would incorporate more extensive fire protection measures than existing older buildings in the area because of more stringent code standards now in effect. New buildings must conform to Life Safety Provisions of the San Francisco Building Code which require automatic fire sprinklers, a fire alarm system, and emergency power and special elevator controls. The project, by itself, would not require more fire department personnel or equipment. Water for fighting fires would be available to the project from both the domestic and high-pressure water systems. [1]Effects of cumulative development on Fire Department services will be discussed in the EIR.

The project site is within Police Southern Station's district. The site area is patrolled by radio-dispatched patrol cars 24 hours a day. There is no foot patrol. The proposed development would increase property and the daytime population on the site, thus increasing the potential for crime. Crime is low in the project area due to the low opportunity for crime and the low permanent population in the area. The increasing development of office buildings in the South of Market area could cause an increase in commercial burglaries. Additional personnel or equipment would not be required by the police department due to the project.[2]

There would be an increase in demand for communication systems. Pacific Telephone would make any improvements necessary to provide adequate service and anticipates no difficulty in meeting the service demands generated by the project.[3]

The development would result in water consumption at the site of approximately 30,000 gallons per day (gpd). A 6- and an 8-inch water main in Second Street would be available for water service.[4]

The amount of wastewater generated by the project would be about the same as the water consumed. The three-by-five-foot sewers in Second, Folsom and Clementina Streets could serve the project. The sewer also meets the design criteria to satisfy the five-year storm capacity.[5]

The proposed project would generate about one ton of solid waste per workday. The Golden Gate Disposal Company would remove solid waste and does not anticipate problems in meeting the demand generated by the proposed development. Solid waste is currently disposed of at Mountain View. As of November 1, 1983, solid waste is transported to the Altamont Landfill in Alameda County. The disposal company

encourages the use of trash compactors to reduce the indirect transportation impacts associated with disposal of waste.[6]

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[1]Edward Phipps, Assistant Chief, Support Services, San Francisco Fire Department, letter, October 11, 1983.

[2]Hal Waterman, Planning and Research Division, San Francisco Police Department, telephone communication, June 30, 1983.

[3]Leo Ladner, Building Industry consultant, Pacific Telephone, telephone communication, September 17, 1983.

[4]George Nakagaki, Manager, City Distribution, San Francisco Water Department, letter, September 13, 1983.

[5]Nathan Lee, Engineering Associate II, Bureau of Sanitary Engineering, telephone communication, August 17, 1983.

[6]Fiore Garbarino, Office Manager, Golden Gate Disposal Company, telephone communication, August 17, 1983.

	Yes	No	Discussed
8. Biology. Could the project:			
*a. Substantially affect a rare or endangered species of animal or plant or the habitat of the species?	___	X	___
*b. Substantially diminish habitat for fish, wildlife or plants, or interfere substantially with the movement of any resident or migratory fish or wildlife species?	___	X	___
c. Require removal of substantial numbers of mature, scenic trees?	___	X	___

The project site is totally covered by buildings or by pavement for parking. There are no rare or endangered species of plant or animal habitats on site. These matters do not require further discussion in the EIR.

	Yes	No	Discussed
9. Geology/Topography. Could the project:			
*a. Expose people or structures to major geologic hazards (slides, subsidence, erosion and liquefaction)?	___	X	X
b. Change substantially the topography or any unique geologic or physical features of the site?	___	X	___

The project site is in a Special Geologic Study Area as designated in the Community Safety Element of the San Francisco Comprehensive Plan. In order to obtain a bulding permit, the project sponsor would be required to obtain a site specific soils report from a California-licensed soils engineer or geologist and to construct the building in accordance with the recommendations of the report regarding foundation and structure.[1] According to the geologic map of San Francisco[2] the project site is underlain by about 30 feet of artificial fill, 4 feet of Bay Mud and 72 feet of clayey sand. Since the groundwater table in the vicinity of the project occurs within 15 feet of the surface, dewatering may be necessary during the excavation and foundation construction phase.[3] Mitigations for dewatering appear on page 18 of this document. Pile driving would not occur as underlying materials would provide adequate foundation support and seismic stability. Further investigation will determine whether a spread or mat foundation would be used.[4] These matters do not require further discussion in the EIR.

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[1]Department of City Planning, "Community Safety Element," The Comprehensive Plan, City and County of San Francisco, adopted September 24, 1974 (CPC Resolution 7241), pages 15 and 16; Objective 1, Policy 4.

[2]J. Schlocker, Geology of the San Francisco North Quadrangle, California, U.S. Geological Survey Professional Paper 782, U.S. Government Printing Office, Washington, D.C., 1974, plate 3, scale 1:24,000.

[3]J.P. Bowers & H.T. Taylor, Geotechnical Investigation, Second and Folsom Project, San Francisco, California, Harding-Lawson Associates, San Francisco, California, September 3, 1980, plate 2.

[4]Henry T. Taylor and R. William Rudolph, Preliminary Soils Investigation, Second and Folsom Streets, Northeast Corner, San Francisco, California, Harding-Lawson Associates, San Francisco, December 28, 1983, Section B, page 4.

	Yes	No	Discussed
10. Water. Could the project:			
*a. Substantially degrade water quality, or contaminate a public water supply?	___	X	___
*b. Substantially degrade or deplete ground water resources, or interfere substantially with ground water recharge?	___	X	___
*c. Cause substantial flooding, erosion or siltation?	___	X	___

There is no surface water at the site. The site is currently impervious, covered by existing buildings and paved parking lots. The proposed project would not alter this situation. Runoff would continue to drain into the combined City storm/sewer system. These matters require no further discussion in the EIR.

	Yes	No	Discussed
11. Energy/Natural Resources. Could the project:			
*a. Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner?	___	X	X
b. Have a substantial effect on the potential use, extraction, or depletion of a natural resource?	___	X	X

Based on previous analysis for other projects, office buildings generally are not high energy consumers. The project would increase on-site energy consumption. The project would not encourage wasteful energy-related activities or have a substantial effect on the depletion of a natural resource. The project would conform to Title 24 of the California Administrative Code. For these reasons the project would not have a significant effect on energy; however, pursuant to San Francisco Administrative Code, Chapter 31, project-generated and cumulative energy consumption impacts will be discussed in the EIR.

12. Hazards. Could the project:	Yes	No	Discussed
*a. Create a potential public health hazard or involve the use, production or disposal of materials which pose a hazard to people or animal or plant populations in the area affected?	___	X	___
*b. Interfere with emergency response plans or emergency evacuation plans?	___	X	X
c. Create a potentially substantial fire hazard?	___	X	X

The project, as a mixed-use retail and commercial building with parking, would not create a potential public health hazard through the production or disposal of harmful materials. An evacuation and emergency response plan would be developed as part of the proposed project (see D., Mitigation Measures, page 18). The project's emergency plan would be coordinated with the City's emergency planning activities. The project would not create a substantial fire hazard because it would incorporate more extensive fire protection measures than most existing buildings in the area to comply with more stringent code standards now in effect. These issues will not be discussed in the EIR.

13. Cultural. Could the project:	Yes	No	Discussed
*a. Disrupt or adversely affect a prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group; or a paleontological site except as a part of a scientific study?	___	X	X
*b. Conflict with established recreational, educational, religious or scientific uses of the area?	___	X	___
c. Conflict with preservation of any buildings of City landmark quality?	___	X	___

The excavation required for new foundations would occur in existing disturbed soils so there would be limited potential for encountering cultural resources during construction. However, the project sponsor has included a mitigation measure as part of the project which addresses this potential impact (see D., Mitigation Measures, page 19). Issues associated with cultural impacts require no further discussion in the EIR.

The two buildings on the project site have been rated "C" by the expanded architectural survey by Heritage,[1] but have not been designated as having landmark, historic or architectural value by the Department of City Planning. Neither of these two buildings is listed in the National Register of Historic Places, the California Inventory of Historic Resources or California Historical Landmarks.

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[1] A "C" (contextual importance) rating indicates that a building is distinguished by its scale, materials, compositional treatment, cornice and other features as noted on pages 12 and 13 of Splendid Survivors, Foundation for San Francisco's Architectural Heritage, California Living Books, 1979.

C. OTHER	Yes	No	Discussed
Require approval of permits from City Departments other than DCP or BBI, or from Regional, State or Federal Agencies?	___	X	___

D. MITIGATION MEASURES	Yes	No	N/A	Discussed
1. If any significant effects have been identified, are there ways to mitigate them?	X	___	___	X
2. Are all mitigation measures identified above included in the project?	___	X	___	X

MITIGATION MEASURES INCLUDED AS PART OF THE PROJECT:

1. **HAZARDS**

An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to ensure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance of final building permits by the Department of Public Works.

2. GEOLOGY/TOPOGRAPHY

The project sponsor would obtain a site-specific soils report from a California-licensed soils engineer or geologist and construct the project in accordance with the recommendations of that report regarding foundation and structure.

Should dewatering be necessary, the final soils and foundation report shall address the potential settlement and subsidence impacts of dewatering of the site. Based upon this discussion, the report shall contain a determination as to whether or not a lateral movement and settlement survey should be done to monitor any horizontal or vertical movement of surrounding buildngs and adjacent streets. If a monitoring survey is recommended, the Department of Public Works will require that a Special Inspector (as defined in Article 3 of the Building Code) be retained by the project sponsor to perform this monitoring. If, in the judgment of the Special Inspector, unacceptable movement were to occur during dewatering, groundwater recharge would be used to halt this settlement. Costs for the survey and any necessary repairs to service under the street would be borne by the contractor.

During excavation, shoring and bracing would be used to reduce soil movements beneath adjacent structures and streets. If necessary, the excavation would be kept dry by sump pumping as required rather than through the use of dewatering wells. This would prevent consolidation of soils supporting adjacent structures and would avoid exposing nearby wooden foundations to dry rot.

3. NOISE

An acoustical analysis would be prepared under the supervision of a person experienced in the field of acoustical engineering detailing the reduction requirements of the project. Necessary noise insulation features would be included in the project design. In order to ensure compliance with the Master Plan, a copy of this report would be submitted with the building permit application.

The construction contract would specify that the contractor muffle equipment so that noise levels would not exceed the limits stated in the City Noise Ordinance (Article 29, San Francisco Administrative Code, 1972).

Both intake and exhaust of impact tools and equipment would be muffled to the satisfaction of the Director of Public Works. Mufflers and shrouds on jackhammers, and impact wrenches could reduce the noise impacts of these operations by 10-15 dBA. This would reduce the impacts of these operations to 60 dBA or below at adjacent office or retail spaces with windows closed; with open windows noise levels would be distracting but would not interfere with telephone use.

4. ARCHITECTURAL AND HISTORIC RESOURCES

Should evidence of cultural or historic artifacts of significance be found during project excavation, the Enviornmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist or other expert to help the Office of Environmental Review determine the significance of the find and whether feasiblle measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

5. AIR QUALITY AND CLIMATE

The California Health and Safety Code requires that measures be taken to minimize dust generation by watering demolition materials and soils. An effective watering program (complete coverage twice daily) can reduce emissions by about 50%. The project sponsor would require the contractor to implement a program to water the site at least twice a day , which would reduce airborne construction dust and particulates by about 50% and reduce the likelihood of exceeding the state and federal standards.

Additional mitigation measures for the project will be discussed in the EIR if need is identified.

E. ALTERNATIVES

The following alternatives to the proposed project will be discussed in the EIR:

1. No project

   This alternative will discuss the conditions which would prevail on the project site if no development occurred.

2. The Downtown Plan

   This alternative will discuss a project consistent with the Downtown Plan but which does not include transfer of development rights.

3. Downtown Plan with Transfer of Development Rights (TDRs)

   This alternative will analyze a project which would be consistent with the Downtown Plan and incorporate development rights transferred from other properties, thus increasing the project size.

4. Mixed-Use Development with Residential

   This alternative will analyze the development of a project with office uses, residential, and ground-level retail.

5. Light-Industrial

   In this alternative, a project with ground-level, light-industrial uses, such as printing, will be analyzed.

F. MANDATORY FINDINGS OF SIGNIFICANCE	Yes	No	Discussed
*1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	___	X	___
*2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	___	X	___
*3. Does the project have possible environmental effects which are individually limited, but cumulatively considerable? (Analyze in the light of past projects, other current projects, and probable future projects.)	X	___	___

*4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?	___	X	___
*5. Is there a serious public controversy concerning the possible environmental effect of the project?	___	X	___

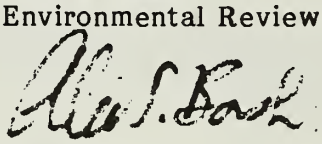
G. ON THE BASIS OF THIS INITIAL STUDY:

___ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

___ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers __, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

_X_ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Alec S. Bash
Environmental Review Officer



for
Dean L. Macris
Director of Planning

Date: February 10, 1984

APPENDIX B

TRANSPORTATION

TABLE B-1

PEDESTRIAN FLOW REGIMES

Flow Regime	Walking Speed Choice	Conflicts	Average Speed Rate (P/F/M)[1]
Open	Free Selection	None	0.5
Unimpeded	Some Selection	Minor	0.5 - 2.0
Impeded	Some Selection	High Indirect Interaction	2.0 - 6.0
Constrained	Some Restriction	Multiple	6.0 - 10.0
Crowded	Restricted	High Probability	10.0 - 14.0
Congested	All Reduced	Frequent	14.0 - 16.0
Jammed	Shuffle Only	Unavoidable	16.0+

[1] P/F/M - Pedestrians per foot of sidewalk width per minute.

Source: Boris Pushkarev and Jeffrey M. Zupan, Urban Space for Pedestrians, Massachusetts, MIT Press, 1975.

INTERSECTION ANALYSIS

The capacity analysis of each intersection at which a turning movement count was made utilized the "critical lane" method. This method of capacity calculation is a summation of maximum conflicting approach lane volumes that gives the capacity of an intersection in vehicles per hour per lane. (This method is explained in detail in an article entitled "Intersection Capacity Measurement Through Critical Movement Summations: A Planning Tool," by Henry B. McInerney and Stephen G. Peterson, January 1971, Traffic Engineering. This method is also explained in "Interim Materials on Highway Capacity," Transportation Research Circular No. 212, Transportation Research Board, January 1980). The maximum service volume for Level of Service E was assumed as intersection capacity. A service volume is the maximum number of vehicles that can pass an intersection during a specified time period in which operating conditions are maintained corresponding to the selected and specified Level of Service (see Table D-3). For each intersection analyzed, the existing peak-hour volume was computed and a volume-to-capacity (v/c) ratio was calculated by dividing the existing volume by the capacity at Level of Service E.

The pedestrian analysis involves a calculation of pedestrian flows and the quality of flow in the nearby cross walks. Pedestrian volumes are actually counted and future volumes (due to the proposed project and cumulative development) are added. The pedestrian flow is calculated as a rate of pedestrian volume per foot of walkway width per minute. Based upon the identified pedestrian flows, the quality of flow is then determined in terms of walking speed and conflicts. The pedestrian flow volumes range from "open" to "jammed" representing a full range of flow quality. (This method is presented in detail in the book Urban Space for Pedestrians by Boris Pushkarev and Jeffrey M. Zupan, MIT Press, 1975.)

TABLE B-2

LEVELS OF SERVICE DEFINITIONS
FOR SIGNALIZED INTERSECTIONS[1]

Level of Service A

Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.

Level of Service B

Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.

Level of Service C

Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally must have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.

Level of Service D

Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.

Level of Service E

Capacity occurs at Level of Service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting upstream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.

Level of Service F

Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.

[1]City and County of San Francisco, Department of Public Works, Traffic Engineering Division.

TABLE B-3

PASSENGER LEVELS OF SERVICE ON BUS TRANSIT

	Volume/Capacity (v/c) Ratio*
Level of Service A	0.00-0.50
Level of Service A describes a condition of excellent passenger comfort. Passenger loadings are low with less than half the seats filled. There is little or no restriction on passenger maneuvcrability. Passenger loading times do not affect scheduled operation.	
Level of Service B	
Level of Service B is in the range of passenger comfort with moderate passenger loadings. Passengers still have reasonable freedom of movement on the transit vehicle. Passenger loading times do not affect scheduled operations.	0.51-0.75
Level of Service C	
Level of Service C is still in the zone of passenger comfort, but loadings approach seated capacity and passenger maneuverability on the transit vehicle is beginning to be restricted. Relatively satisfactory operating schedules are still obtained as passenger loading times are not excessive.	0.76-1.00
Level of Service D	
Level of Service D approaches uncomfortable passenger conditions with tolerable numbers of standees. Passengers have restricted freedom to move about on the transit vehicle. Conditions can be tolerated for short periods of time. Passenger loadings begin to affect schedule adherence as the restricted freedom of movement for passengers requires longer loading times.	1.01-1.25
Level of Service E	
Level of Service E passenger loadings approach manufacturers' recommended maximums and passenger comfort is at low levels. Freedom to move about is substantially diminished. Passenger loading times increase as mobility of passengers on the transit vehicle decreases. Scheduled operation is difficult to maintain at this level. Bunching of buses tends to occur which can rapidly cause operations to deteriorate.	1.26-1.50
Level of Service F	
Level of Service F describes crush loadings. Passenger comfort and maneuverability is extremely poor. Crush loadings lead to deterioration of scheduled operations through substantially increased loading times.	1.51-1.60

Source: Interim Materials on Highway Capacity, Transportation Research Circular 212, pages 73-113, Transportation Research Board, 1980.

TABLE B-4

TRAFFIC LEVELS OF SERVICE FOR FREEWAYS

	Volume/Capacity (v/c) Ratio*
Level of Service A Level of Service A describes a condition of free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by driver desires, speed limits, and physical roadway conditions. There is little or no restriction in maneuverability due to the presence of other vehicles, and drivers can maintain their desired speeds with little or no delay.	0.00-0.60
Level of Service B Level of Service B is in the higher speed range of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable, with a low probability of traffic flow being restricted.	0.61-0.70
Level of Service C Level of Service C is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes or pass. A relatively satisfactory operating speed is still obtained.	0.71-0.80
Level of Service D Level of Service D approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver, and comfort and convenience are low, but conditions can be tolerated for short periods of time.	0.81-0.90
Level of Service E Level of Service E cannot be described by speed alone, but represents operations at even lower operating speeds (typically about 30 to 35 mph) than in Level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages of momentary duration.	0.91-1.00
Level of Service F Level of Service F describes forced flow operation at low speeds (less than 30 mph), in which the freeway acts as storage for queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of downstream congestion. In the extreme, both speed and volume can drop to zero.	1.00+

*Capacity is defined as level of Service E.

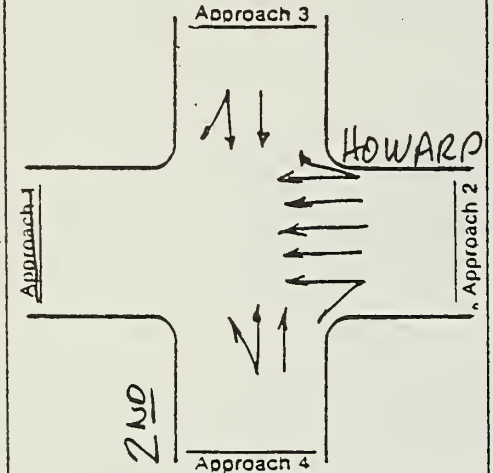
Source: Highway Capacity Manual, Special Report 87, Highway Research Board, 1965.

INTERSECTION CAPACITY ANALYSIS

Intersection SECOND / HOWARD Design Hour PM PEAK 4:30-5:30

Other Conditions EXISTING TRAFFIC (COUNTED 3/2/81)

1. Identify Lane Geometry



4. Left Turn Check

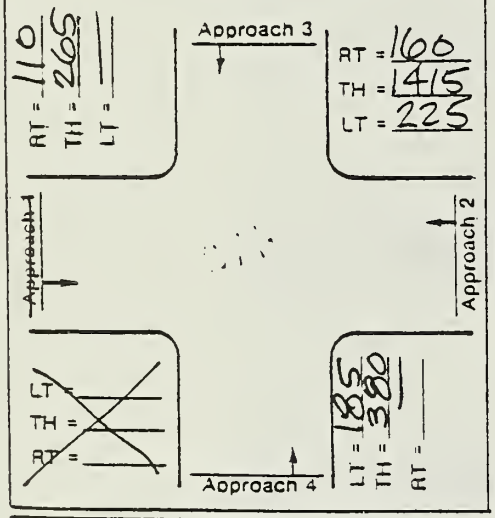
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

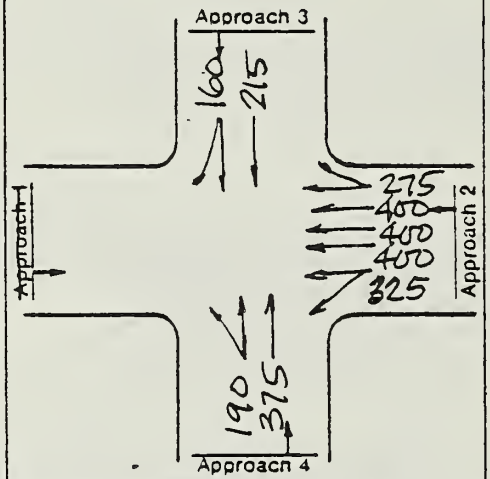
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2φ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

400 . 375 . — . —

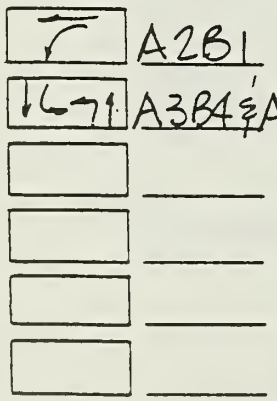
= 775 vph

8. Intersection Level of Service

A

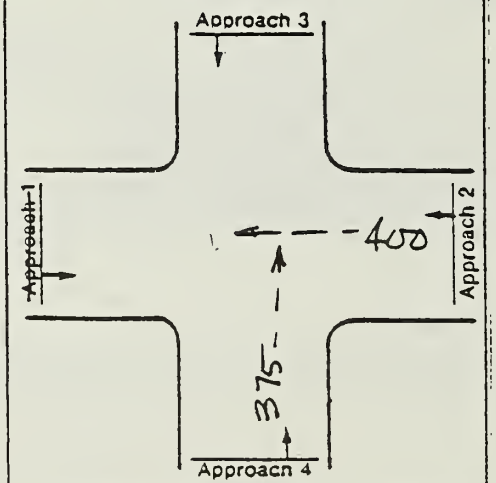
Notes:

3. Identify Phasing



A1 → A3 ↓	B1 ← B3 ↑
A2 ← A4 ↑	B2 → B4 ↓

6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

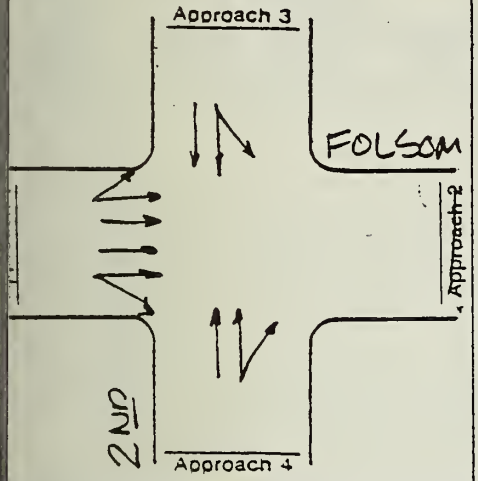
INTERSECTION CAPACITY ANALYSIS

4:30-5:30

Intersection SECOND / FOLSOM Design Hour P.M. PEAK

Other Conditions EXISTING TRAFFIC (COUNTED 5/8/81)

1. Identify Lane Geometry



4. Left Turn Check

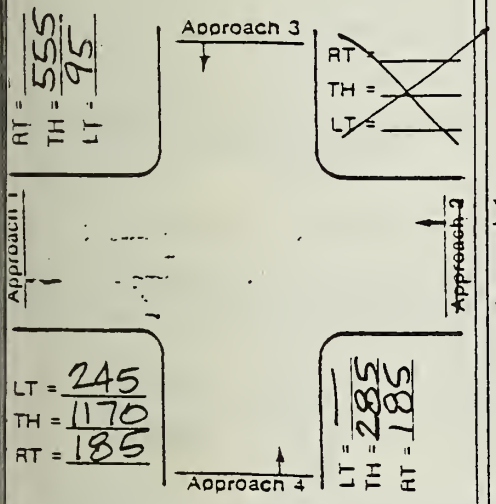
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

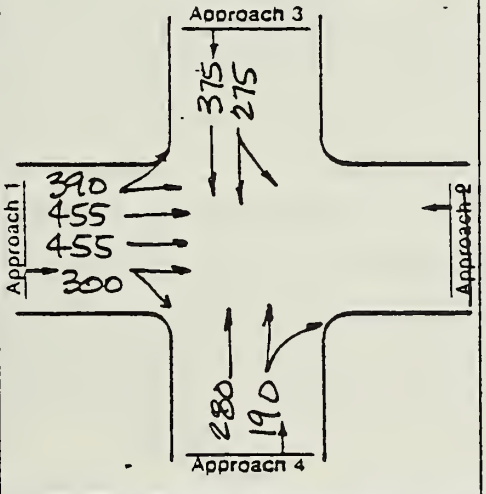
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2 ϕ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

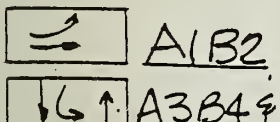
455 + 375 + — + — = 830 vph

8. Intersection Level of Service

A

Notes:

3. Identify Phasing

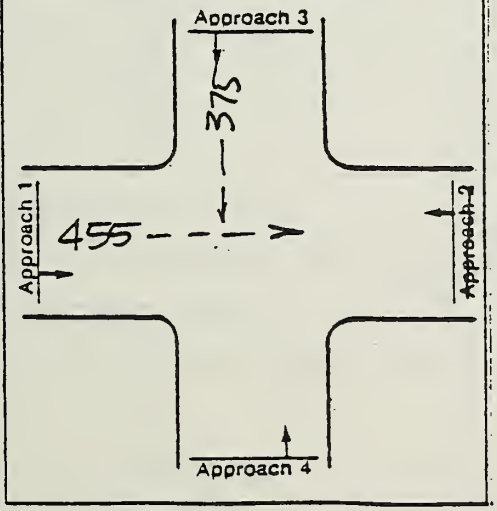


A1B2

A3B4 & A4

A1 →	A3 ↓	B1 ↰	B3 ↰
A2 ←	A4 ↑	B2 ↳	B4 ↳

6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

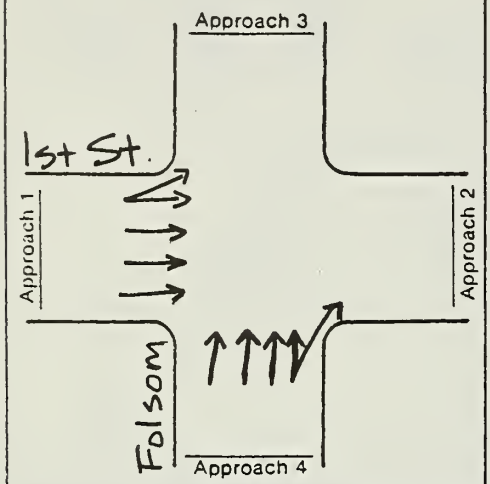
Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

INTERSECTION CAPACITY ANALYSIS

Intersection First /Folsom Design Hour 4:30-6:30 P.M. Peak

Other Conditions Existing Traffic (counted 12/6/84)

1. Identify Lane Geometry



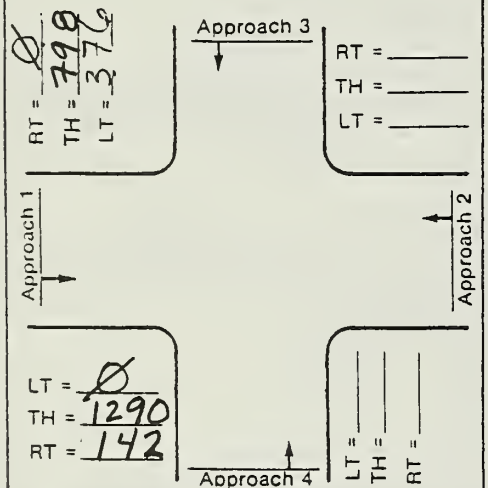
4. Left Turn Check

	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

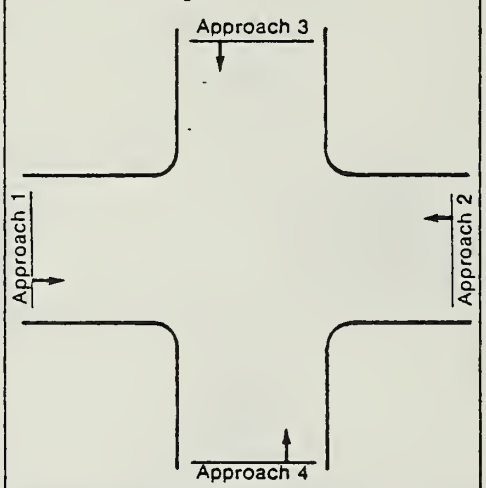
6b. Volume Adjustment for Multiphase Signal Overlap

Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

_____ + _____ + _____ + _____

= _____ vph

8. Intersection Level of Service

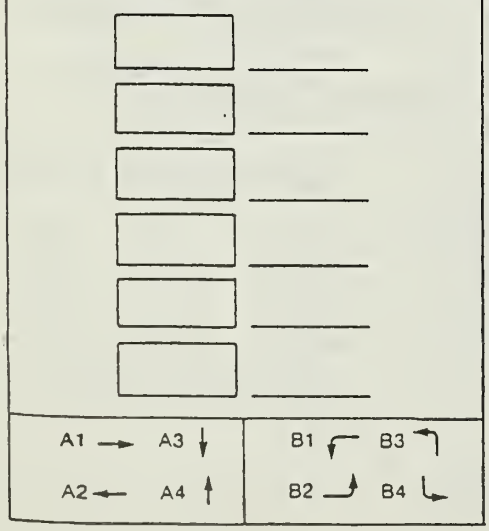
[ ]

Notes:

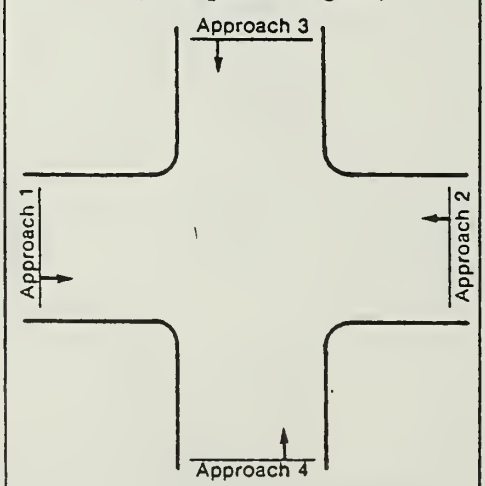
A/B AT FOLSOM

E/F AT FIRST

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

APPENDIX C
CUMULATIVE DEVELOPMENT

The list of office and retail projects shown in Table C-1 was prepared as a background document for a land use-based method of analyzing cumulative impacts. A land use-based cumulative analysis is one of the two methods of cumulative analyses suggested by the State CEQA Guidelines (Section 15130(b) (1) (A)), whereby a list of related projects is used to determine the combined effects of the whole and to determine the contribution of a proposed office or retail project to the overall cumulative effect. This is only one method of determining cumulative impacts. The other method of determining cumulative impacts is an analysis based on estimates of total employment projected for the area. This latter method is permitted by State Guidelines Section 15130(b) (1) (B) if the employment projections are based on an appropriate planning document.

The attached cumulative list is an expanded version of past lists and includes all office and large retail projects proposed, approved, under construction and recently completed in the greater downtown area which have active applications in the Department of City Planning. This list is appropriate for use only in a land use-based analysis of the cumulative impacts of office/retail projects in the greater downtown.

Relevant Redevelopment Agency projects have been included in the list. The Rincon Point/South Beach Redevelopment Area includes four projects: 77,000 square feet of office space at 181 Steuart Street, 200,000 square feet of office space on First Street, and a 30,000-square-foot office building, all in at least preliminary negotiation stages between the Agency and potential developers; and 453,000 square feet of office space proposed by the U.S. Post Office at the Rincon Annex site (source: San Francisco Redevelopment Agency). The listing for the Yerba Buena Gardens in the YBC Redevelopment Area includes 1.2 million square feet of office space in the Olympia and York proposal (source: S.F. Redevelopment Agency). Other office buildings in the YBC and applicable parts of the Western Addition Redevelopment Areas are listed under individual

APPENDIX C

TABLE C-1

CUMULATIVE DOWNTOWN OFFICE DEVELOPMENT IN SAN FRANCISCO
AS OF MARCH 10, 1984

PROJECTS UNDER FORMAL REVIEW

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
59	83.177E	1620 Montgomery	62,270	45,390	---	---
110	82.129E	Embarcadero Terraces (1000 Front)	130,000	139,000	3,000	3,000
112	83.447E	1100 Sansome	55,000	48,000	---	---
113	82.410E	1171 Sansome	30,000	30,000	---	---
113	8264603	220 Green	3,520	3,520	---	---
130	83.612C	1550 Powell	2,500	2,500	---	---
136	83.476V	962 Battery	15,000	15,000	---	---
192	83.412ED	1055 Stockton	---	---	81,500	66,500
194	83.128E	732 Washington	17,500	17,500	11,240	11,240
195	82.643E	660 Washington	3,938	3,938	---	---
227	82.463E	505 Montgomery	327,300	300,670	12,100	-4,775
228	83.422E	560 Sacramento	48,000	31,000	---	---
229	83.222EC	Embarcadero West	575,000	382,000	9,000	9,000
236	82.511E	222 Front	40,250	33,400	3,250	0
250	82.421E	Pine/Kearny	186,000	186,000	6,750	6,750
266	83.420ED	98 Battery	160,000	106,500	---	---
267	83.421ED	225 Pine	134,000	134,000	---	---
287	83.91ED	237 Kearney/Bush	99,600	87,800	6,100	2,400
288	83.148E	665 Bush (M)	12,400	2,600	---	-2,700
309	83.333E	212 Stockton	32,220	15,885	21,700	16,200
326	8312187	156 Ellis	3,200	3,200	---	---
327	82.445E	Stockton/O'Farrell	43,300	25,750	57,950	26,000
331	81.448E	Mixed Use Development (M)	50,000	50,000	70,000	40,000
336	83.21ECV	440 Turk	25,000	8,150	---	---
642	83.218V	1699 Van Ness	20,000	20,000	---	---
814	81.540E	101 Hayes	132,000	132,000	6,000	6,000
3526	83.475V	530-550 9th	42,300	42,300	---	---
3702	83.196E	1169 Market, Trinity	820,000	805,000	40,000	40,000

TABLE C-1
(continued)

PROJECTS UNDER FORMAL REVIEW (continued)

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
3704	83.404	901 Market, Penney's	145 500	126,000	80,000	80,000
3705	83.314E	5th and Market	880,000	778,000	120.000	40,000
3707	SFRA	YBC Office Bldg.	593,000	593,000	---	---
3708	81.297ED	Lincoln Plaza (562 Mission)	405,000	265,000	10,000	10,000
3708	83.75E	49 Stevenson	169,600	136,900	9,800	-2,900
3721	83.331E	100 First @ Mission	348,920	342,000	---	---
3721	83.40EZD	524 Howard	279,000	279,000	15,000	15,000
3735	83.313E	35 Hawthorne	47,400	47,400	2,900	2,900
3736	83.311E	299 2nd @ Folsom	206,000	171,000	10,000	10,000
3744	84.41E	Hills Brothers	635,000	535,000	40,000	40,000
3749	83.464EV	50 Guy Place	17,500	17,500	---	---
3752	83.310E	837 Folsom	200,000	200,000	---	---
3769	83.213EV	59 Harrison	113,500	49,750	---	---
3776	83.451E	501 Bryant	67,000	35,000	14,000	4,000
3778	83.547E	775 Bryant	27,890	27,890	3,675	3,675
3786	82.33E	655 5th/Townsend	126,250	126,250	---	---
3786	83.272EV	525 Brannon	13,500	13,500	---	---
3788	82.352EV	640 2nd Street	39,100	37,400	---	---
3789	82.31EV	615 2nd/Brannan (C)	90,000	70,000	9,300	9,300
3794	83.545V	139 Townsend	51,200	50,000	---	---
3923	81.491EVF	1550 Bryant	80,600	49,600	---	---
-	SFRA	Yerba Buena Gardens	1,340,000	1,340,000	---	---
-	SFRA	Rincon Point/S. Beach	760,000	760,000	---	---
	TOTAL PROJECTS UNDER FORMAL REVIEW		**9,744,260**	**8,721,295**	**643,265**	**442,590**

(C) = Conversion (generally industrial and/or warehouse to office)
(M) = Mixed Use (office/residential/commercial)

TABLE C-1
(continued)

APPROVED PROJECTS

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
65	82.168V	990 Columbus	12,000	12,000	---	---
112	81.258	Ice House Conversion (C)	209,000	209,000	---	---
164	81.583D	50 Osgood Place	22,500	22,500	9,100	9,100
176	82.368E	900 Kearny	25,000	25,000	5,000	5,000
176	83.229E	801 Montgomery	31,800	31,800	6,200	6,200
225	81.403ED	814 Stockton	3,500	3,500	3,300	3,300
265	81.195ED	388 Market at Pine (M)	234,500	85,500	10,000	-8,500
268	81.422D	250 Montgomery at Pine	105,700	65,700	8,000	8,000
271	83.13E	582 Bush	18,100	18.100	800	800
288	81.687ED	222 Kearny/Sutter	150.000	49,950	10,000	-8,400
294	82.87D	44 Campton Place	7,600	7,600	---	---
642	82.224VEC	1750 California	82,525	82,525	---	---
669	81.667ED	1361 Bush	13,000	13,000	---	---
671	82.24V	1581 Bush (C)	16,000	16,000	---	---
690	SFRA	Post/Van Ness	88,000	88,000	---	---
716	81.581ED	Polk/O'Farrell (M)	61,600	61,600	22,400	22,400
818	83.94EV	583-591 Hayes (C)	4,900	4,900	---	---
3504	82.137V	44 Gough (C)	30,000	30,000	---	---
3702	81.549ED	1145 Market	137,500	108,500	8,000	8,000
3705	80.315	Apparel Mart III	332,400	332,400	---	---
3707	81.492ED	90 New Montgomery	124,300	124,300	3,350	3,350
3707	81.245DA	New Montgomery Place	227,500	209,700	2,200	-3,900
3708	81.493ED	71 Stevenson	324,600	324,600	6,200	6,200
3709	81.113ED	Central Plaza	353,100	136,300	17,400	17,400
3717	81.183E	123 Mission	342,800	342,800	---	---
3724	81.102E	Holland Ct. (C)	27,850	27,850	---	---
3729	82.86D	774 Tehama	5,800	5,800	---	---
3733	EE81.2	868 Folsom	65,000	65,000	---	---
3733	82.29E	832 Folsom	50,000	50,000	---	---
3735	SFRA	75 Hawthorne (C)	61,900	61,900	---	---
3738	DR80.5	315 Howard	294,000	294,000	3,200	3,200
3749	EE81.18	Marathon - 2nd & Folsom	686,700	686,700	35,300	35,300
3750	82.241E	600 Harrison	228,000	228,000	10,000	10,000
3750	82.77V	642 Harrison (C)	54,400	45,900	---	---
3764/74	82.591E	Second Street Square (C)	333 000	263,000	25,000	25,000
3775	81.147V	338-340 Brannan (C)	36,000	36,000	---	---

TABLE C-1
(continued)

APPROVED PROJECTS (continued)

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
3776	EE81.59	Welsh Commons (M)	55,600	55,600	12,000	12,000
3788	81.296Z	690 2nd/Townsend (C)	16,600	16,600	16,000	16,000
3789	81.552EV	625 2nd/Townsend (C)	157,000	157,000	---	---
3794	81.569EV	123 Townsend	104,000	49,500	---	---
3794		155 Townsend	19,000	19,000	---	---
3803	81.244D	China Basin Expansion	196,000	196,000	---	---
9900	81.63E	Ferry Building Rehab	309,500	97,500	163,500	124,000
	TOTAL APPROVED PROJECTS		**5,658,275**	**4,760,625**	**376,950**	**294,450**

(C) = Conversion (generally industrial and/or warehouse to office)
(M) = Mixed Use (office/residential/commercial)

TABLE C-1
(continued)

PROJECTS UNDER CONSTRUCTION

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
58	82.234E	Roundhouse (C)	45,000	45,000	3,000	3,000
136	81.243E	955 Front/55 Green	50.000	50,000	---	---
143	81.353ED	1000 Montgomery (C)	39,000	39,000	---	---
146	83.99EC	644 Broadway	42,800	42,800	---	---
161	DR80 191	Mirawa Center	36,000	36,000	30,650	30,650
166	DR80.15	750 Battery	105,400	105,400	12,800	12,800
166	CU81.7	222 Pacific at Front (C)	142,000	142,000	---	---
167	SFRA	Golden Gateway III	103,000	103,000	---	---
176	81.673EACV	Columbus/Pacific (Savoy)	49,000	49,000	22,000	22,000
208	81.104EDC	Washington/Montgomery (M)	235,000	233,300	4,000	-1,200
227	EE80.296	Bank of Canton	230,500	177,500	---	-800
239	DR80.1	456 Montgomery	160,550	160,550	24,250	24,250
240	81.705ED	580 California/Kearny	329,500	260,000	6,500	6,500
261	81.249ECQ	345 California (M)	640,000	466,500	15,500	15,500
262	81.206D	130 Battery	41,000	41,000	---	---
270	81.175ED	466 Bush	86,700	86,700	7,800	2,200
271	81.517	453 Grant	27,500	27,500	6,200	6,200
288	81.461EC	333 Bush (Campeau) (M)	498,400	458,100	20,900	20,900
288	DR80.24	101 Montgomery	264,000	234,000	4,900	-14,100
289	81.308D	One Sansome	603.000	603,000	7,000	7,000
311	82.120D	S. F. Federal	246,800	218,850	1,600	-9,440
351	DR79.24	Mardikian/1170 Market	40,000	40,000	---	---
641	82.200CV	1735 Franklin (C)	8,600	8,600	---	---
672	SFRA	Wealth Investments	104.500	104,500	---	---
743	SFRA	Van Ness/Turk (Vanguard)	85,000	85,000	---	---
767	STATE	State Office Building	293,300	293,300	---	---
816	82.212ED	300-350 Gough (M/C)	16,000	16,000	---	---
834	82.603E	25 Van Ness (C)	101,800	42,800	36 400	36,400
3512	82.14	Van Ness Plaza	170.000	170.000	6,000	6,000
3715	82.16EC	121 Steuart	33,200	33,200	---	---
3715		141 Steuart	80.000	80,000	---	---
3717	EE79.236	101 Mission	219,350	219,350	---	---
3717	EE80.349	Spear/Main (160 Spear)	279,000	279,000	7,600	7,600
3717	82.82D	135 Main	260.000	260,000	4,000	4,000
3722	81.417ED	144 Second at Minna	30,000	30,000	---	---
3741	82.203C	201 Spear	229,000	229,000	5,200	5,200
3787	81.306	252 Townsend at Lusk	61,000	61,000	---	---
	TOTAL PROJECTS UNDER CONSTRUCTION		**5,985,900**	**5,530,950**	**226,300**	**184,660**
	TOTAL (ALL PROJECTS)		**21,388,430**	**19,012,870**	**1,246,515**	**921,700**

(C) = Conversion (generally industrial and/or warehouse to office)
(M)= Mixed Use (office/residential/commercial)

Source: San Francisco Department of City Planning

TABLE C-1

PROJECTS COMPLETED BEFORE 1984 But Not In Base Case Analysis

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction	Date Occupied
106	81.415ED	1299 Sansome	41,000	41,000	3,500	3,500	1983
141	81.151EV	100 Broadway	13,000	13,000	---	---	1983
163	EE81.1	901 Montgomery	63,000	63,000	18,800	18,800	1983
164	81.631D	847 Sansome	23,750	23,750	---	---	1983
164	81.251D	936 Montgomery	21,500	11,500	---	---	1983
196		736 Montgomery	40,000	40,000	---	---	1983
196	CU79.49	Pacific Lumber Co.	92,000	92,000	---	---	1983
206	81.165D	401 Washington/Battery	13,200	13,200	1,800	1,800	1983
228	81.610ED	569 Sacramento (C)	19,000	19,000	---	---	1983
237	DR80.6	353 Sacramento (Daon)	277,000	251,000	8,300	-2,000	1983
240	DR80.16	550 Kearny (Addition)	71,400	71,400	---	---	1983
263	CU79.12	101 California	1,265,000	1,257,000	24,700	-14,300	1983
287	81.550D	Sloane Building (C)	125,300	125,300	30,000	30,000	1983
292	DR79.13	Crocker National Bank	676,000	495,000	86,000	54,000	1983
312	EE79.370	50 Grant	90,000	90,000	---	---	1983
313	EE77.257	Nieman Marcus			143,000	128,000	1982
351	DR79.133	10 U.N. Plaza	92,050	92,050	---	---	1983
738	SFRA	One Flynn Center	25,000	25,000	---	---	1983
762	SFRA	Opera Plaza (M)	50,000	50,000	---	---	1983
3518	81.483V	291 10th St.	25,700	25,700	---	-25,700	1983
3702	EE81.25	1155 Market/8th	138,700	138,700	8,800	8,800	1983
3708	DR80.34	25 Jessie/Ecker Square	111,000	111,000	---	---	1983
3709	DR80.36	Five Fremont Center	791,200	722,200	35,000	17,300	1983
3712	DR79.11	Federal Reserve Bank	640,000	640,000	---	---	1983
3717	EE78.413	150 Spear	330,000	330,000	---	---	1983
3718	DR79.12	Pacific Gateway	540,000	540,000	7,500	7,500	1983
3724	SFRA	Yerba Buena West	335,000	335,000	---	---	1983
3732	81.548DE	466 Clementina (C)	15,150	15,150	---	---	1983
3735	SFRA	Convention Plaza	339,000	339,000	---	---	1983

TABLE C-1

(continued)

Completed But Not In Base Case Analysis (continued)

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction	Date Occupied
3735	SFRA	Planter's Hotel (C)	20,000	20,000	---	---	1983
3752	EE77-220	Office Bldg. (YBC SB-1)	11,000	11,000	---	---	1983
3763	81.287V	490 2nd/Bryant (C)	40,000	40,000	---	---	1983
3763	81.381	480 2nd/Stillman (C)	35,000	35,000	---	---	1983
3763	82.384EVD	400 2nd Street at Harrison (C)	71,500	49,500	---	---	1983
3776	81.693EV	539 Bryant/Zoe (C)	63,000	63,000	---	---	1983
	TOTAL		**6,504,450**	**6,188,450**	**367,400**	**227,700**	

(C) = Conversion (generally industrial and/or warehouse to office)
(M) = Mixed Use (office/residential/commercial)

Source: Department of City Planning

building names or addresses, based on information obtained from regular contact with Redevelopment Agency staff. Other jurisdictions are also contacted when the cumulative list is updated: the new 293,000-square-foot State Office Building under construction at Van Ness and McAllister is included; no Federal office space is proposed in downtown San Francisco in the near future other than that at the Rincon Annex Post Office site in the Rincon Point Redevelopment Area (John Scales, General Services Administration, telephone conversation, April 11, 1984).

Hotel projects have not been included in the list because hotel uses have different peak-travel characteristics from office buildings. They generally do not significantly affect peak-hour traffic or transit and therefore do not contribute to effects such as maximum production of air pollutants (see file No. EE81.61, 135 Main Final Supplemental EIR, certified November 30, 1982, page 150). Residential projects have not been included because the few residential structures in the study area are unrelated to office uses. Residential travel in the downtown usually takes place in the contra-commute direction during peak hours and thus does not contribute to cumulative traffic or transit congestion. In addition, office trips in the p.m. peak period are assumed to be made by workers traveling to their residences. Trip generation calculated for residential uses includes persons returning to their homes after work in the p.m. peak period. Inclusion in the cumulative analysis of residential uses in downtown San Francisco would double count project-generated travel: once when employees left their office building and again when they arrived at their residence (if they lived in the downtown area).

Approximately 1.3 million square feet of office space is proposed for locations outside the greater downtown area. All but two of these projects (San Francisco Executive Park just east of U.S. 101 near the southern border of San Francisco, proposed for about 1.1 million square feet, and St. Mary's Medical Office Building on Shrader at Fulton, proposed to be about 90,000 square feet) are under 10,000 square feet. These projects are not included on the cumulative list because their impacts do not accumulate measurably with office space in the downtown area. Although the Executive Park proposal would contribute to auto traffic on U.S. 101, the critical analysis points for p.m. peak-period cumulative downtown traffic on U.S. 101 are the freeway entrances near downtown, the approaches to the Bay Bridge, and the Alemany interchange, which restricts southbound U.S. 101 traffic in the p.m. peak period. The Executive Park traffic would not contribute measurably to demands on freeway entrances near downtown or peak-period impacts on

the Alemany interchange. It is factored in as part of the traffic approaching the Bay Bridge before cumulative downtown development is added. (Executive Park DEIR, September 9, 1983. Note that an EIR was prepared in 1976 for a project on this site; following permits for four of the proposed office buildings, the developer made major changes in the project that necessitated the new EIR now in process.)

The Department's master project log contains listings for projects that are no longer active for various reasons, such as no action by project sponsor in over one year, application withdrawn by sponsor, or project proposal revised to non-office or non-retail uses (examples of these projects include 272 Sutter, approximately 65,000 square feet, withdrawn by sponsor; 2nd and Harrison, 49,000 square feet, application revised from office space to parking lot). Some of these files have not been formally closed due to higher staff priorities; however, the projects are not included on the cumulative list when staff concludes that the office project has been abandoned, withdrawn or the scope or nature of the proposal is so uncertain as to not be reasonably foreseeable.

In EIRs prepared during the latter half of 1983, the list used for cumulative analyses included a section labeled "Completed But Not in Base Case." As of the end of 1983, that list totaled over 6 million square feet of office space and about 225,000 square feet of retail space. These projects were included on earlier lists even though they were built and fully or partially occupied because some of the baseline data (measurements of the existing situation) for some transportation systems was collected in about mid-1982 and thus could not include the effects of these projects. The baseline has recently been updated to reflect 1984 for use in the Downtown Plan Draft EIR. Projects completed before 1984 are included in the updated baseline data, and appear in Table C-1 for reference purposes. Using 1984 as the existing baseline situation means that projects completed by the end of 1983 should be omitted from the list of projects used for cumulative analyses in order to avoid counting the projects twice. Because some of the baseline data previously used was collected more recently than mid-1982, list-based cumulative analyses overestimated some reported impacts by measuring the effects of office buildings as part of the baseline existing situation and by including the same office building in the calculations of future cumulative impacts. For example, PG&E is already serving office buildings completed in 1982 and 1983; including those buildings in calculations of future cumulative energy demand would count them twice. Therefore, for

some parts of the cumulative analyses, omitting projects completed in 1983 will provide more realistic predictions of future conditions.

The Department is aware of proposals by Southern Pacific Land Co. to develop property near China Basin. This area and the proposals by Southern Pacific have been called "Mission Bay." An application for environmental review was filed for the project over one year ago but was withdrawn in early 1984 and no new application has been filed. Since withdrawal of this application, members of the San Francisco Board of Supervisors have proposed that the City purchase all or portions of the property; this proposal was later dropped. In July 1984, Southern Pacific announced major revisions in its proposal reducing the scope of the development proposal. No new applications have been filed. Both the original project and the July 1984 proposal would require environmental analyses and Zoning Map and Comprehensive Plan amendments, and BCDC and possibly U.S. Army Corps of Engineers permits in addition to City approvals before any building could begin. With no application pending, and with the possibility of further revisions by the developer before submittal of any application, the Mission Bay project remains too speculative to include in any cumulative analyses.

The Department of City Planning is preparing plans and environmental analyses for several areas in or near the downtown. Because these plans involve only proposals for zoning and other land use controls, they are not properly part of any cumulative list. Although analyses for these plans sometimes predict amounts of office space that could be built in the area being studied, the predictions are for purposes of assessing impacts of the plans and in no way reflect proposed future development.

Use of the Department's list for estimating cumulative impacts builds in certain limitations. It assumes, for example, that all proposals will be built at essentially the size proposed and that all buildings, once built, will be fully occupied. It is important to note that the cumulative list has not been adjusted to reflect temporary limitations on growth imposed by the City's actions to establish a Special Use District in the South of Market area and a moratorium on new office and hotel space over 50,000 gross square feet. Nor has any adjustment been made to account for reduced building potential as proposed in the Downtown Plan (base FAR of 14:1 reduced to 10:1). Thus, the total square footages on the list of projects under formal review may be overestimated, and impacts based on the square footages may also be overestimated if some buildings are not built, not fully occupied or reduced in size.

Existing office and retail space that would be replaced by new buildings was subtracted from the proposed new construction to better approximate the impacts the new buildings would have on transportation facilities. As shown in Table C-2, net new office and retail space is less than total new construction as a result of subtracting out existing office and retail space on sites proposed for new buildings. ("Net new" space is used to refer to the amount of new construction in excess of existing space on each site in terms of gross square feet of floor space. It does not refer to net leasable or net rentable floor space.) Existing major office building construction in San Francisco is shown in Table C-3.

TABLE C-2

GROSS SQUARE FEET OF CUMULATIVE OFFICE AND RETAIL DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF March 10, 1984

	Office (Gross Sq. Ft.)		Retail (Gross Sq. Ft.)	
Status of Project	Total New Construction	Net New Construction	Total New Construction	Net New Construction
Under Formal Review	9,744,260	8,721,295	643,265	442,590
Approved	5,658,275	4,760,625	376,950	294,450
Under Construction	5,985,900	5,530,950	226,300	184,660
Grand Totals	21,388,430	19,012,870	1,246,515	921,700

TABLE C-3

MAJOR OFFICE BULDING
CONSTRUCTION IN SAN FRANCISCO
(In gross square feet)

Year	Total Gross Square Feet Completed	5-Year Total	5-Year Annual Average	Cumulative Total of Office Buildings[2]	Cumulative Total of All Downtown Office Buildings[3]
Pre-1960				28,145,000	24,175,000
1960	1,183,000				
1961	270,000				
1962	-				
1963	-				
1964	1,413,000				
1960-1964		2,866,000 (2,580,000)[3]	573,200 (516,000)[3]	30,725,000	26,754,000
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
1965-1969		8,379,000 (7,541,000)[3]	1,675,800 (1,508,000)[3]	38,266,000	34,295,000
1970	1,853,000				
1971	-				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
1970-1974		8,615,000 (7,753,000)[3]	1,723,000 (1,550,000)[1]	46,019,000	42,048,000

(continued)

TABLE C-3 (continued)

Year	Total Gross Square Feet Completed	5-Year Total	5-Year Annual Average	Cumulative Total of All Office Buildings[2]	Cumulative Total of All Downtown Office Buildings[3]
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	-				
1979	2,532,000				
1975-1979		8,157,000 (7,341,000)[1]	1,631,400 (1,468,000)[1]	53,360,000	49,389,000
1980	1,284,000				
1981	3,029,000				
1982	3,771,000				
1983	4,107,700				
1980-1982		12,191,700[4] 10,972,500[1]	3,047,900[4] 2,743,100[1]	64,332,500	62,100,000

[1]Total net square feet (90% of gross). Net new space is added at an increase factor of 90%, since it is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building

[2]San Francisco Downtown Zoning Study, Working Paper No. 1, January 1966, Appendix Table 1, Part 1. For pre-1965, data include the area bounded by Vallejo, Franklin, Central Skyway, Bryant and The Embarcadero. Pre-1965 data also includes one-third of retail/office mixed use. For post-1964, data include the entire City.

[3]Gross floor space for downtown offices is included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the cited January 1966 report. For post-1964, the entire area east of Franklin Street is included.

[4]Four-year total and average.

Source: Department of City Planning, March 15, 1983

APPENDIX D

FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL NOISE

This section provides background information to aid in understanding the technical aspects of this report.

Three dimensions of environmental noise are important in determining subjective response. These are:

a. the intensity or level of the sound

b. the frequency spectrum of the sound

c. the time-varying character of the sound

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing.

The "frequency" of a sound refers to the number of complete pressure fluctuations per second in the sound. The unit of measurement is the cycle per second (cps) or Hertz (Hz). Most of the sounds which we hear in the environment do not consist of a single frequency, but of a broad band of frequencies, differing in level. The quantitative expression of the frequency and level content of a sound is its sound spectrum. A sound spectrum for engineering purposes is typically described in terms of octave bands which separate the audible frequency range (for human beings, from about 20 to 20,000 Hz) into ten segments.

Many rating methods have been devised to permit comparisons of sounds having quite different spectra. Fortunately, the simplest method correlates with human response practically as well as the more complex methods. This method consists of evaluating all of the frequencies of a sound in accordance with a weighting that progressively and severely deemphasizes the importance of frequency components below 1000 Hz, with mild deemphasis above 5000 Hz. This type of frequency weighting reflects the fact that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency midrange.

The weighting curve described above is called "A" weighting, and the level so measured is called the "A-weighted sound level," or simply "A-level."

The A-level in decibels is expressed "dBA"; the appended letter "A" is a reminder of the particular kind of weighting used for the measurement. In practice, the A-level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. All U.S. and international standard sound level meters include such a filter. Typical A-levels measured in the environment and in industry are shown in Figure 1.

Although the A-level may adequately describe environmental noise at any instant in time, the fact is that the community noise level varies continuously. Most environmental noise includes a conglomeration of distant noise souces which create a relatively steady background noise in which no particular source is identifiable. These distant sources may

include traffic, wind in trees, industrial activities, etc. These noise sources are relatively constant from moment to moment, but vary slowly from hour to hour as natural forces change or as human activity follows its daily cycle. Superimposed on this slowly varying background is a succession of identifiable noisy events of brief duration. These may include nearby activities or single vehicle passages, aircraft flyovers, etc., which cause the environmental noise level to vary from instant to instant.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. The L10 is the A-weighted sound level equaled or exceeded during 10 percent of a stated time period. The L10 is considered a good measure of the "average peak" noise. The L50 is the A-weighted sound level that is equaled or exceeded 50 percent of a stated time period. The L50 represents the median sound level. The L90 is the A-weighted sound level equaled or exceeded during 90 percent of a stated time period. The L90 is used to describe the background noise.

As it is often cumbersome to describe the noise environment with these statistical descriptors, a single number descriptor called the Leq is also widely used. The Leq is defined as the equivalent steady-state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period. The Leq is particularly useful in describing the subjective change in an environment where the source of noise remains the same but there is change in the level of activity. Widening roads and/or increasing traffic are examples of this kind of situation.

In determining the daily measure of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noises become very noticeable. Further, most people are sleeping at night and are very sensitve to noise intrusion.

To account for human sensitivity to nighttime noise levels a descriptor, Ldn, (day-night equivalent sound level) was developed. The Ldn divides the 24-hour day into the daytime of 7 a.m. to 10 p.m. and the nighttime of 10 p.m. to 7 a.m. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Ldn, then, is the A-weighted average sound level in decibels during a 24-hour period with 10 dBA added to the hourly Leqs during the nighttime. For highway noise environments the Leq during the peak traffic hour is approximately equal to the Ldn.

The effects of noise on people can be listed in three general categories:

1. subjective effects of annoyance, nuisance, dissatisfaction
2. interference with activities such as speech, sleep, learning
3. physiological effects such as startle, hearing loss

The sound levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Unfortunately, there is as yet no completely satisfactory measure of the subject effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance, and habituation to noise over differing individual past experiences with noise.

Thus, an important parameter in determining a person's subjective reaction to a new noise is the existing noise environment to which one has adapted: the so-called "ambient" noise. "Ambient" is defined as "the all-encompassing noise associated with a given environment, being a composite of sounds from many sources, near and far." In general, the more a new noise exceeds the previously existing ambient, the less acceptable the new noise will be judged by the hearers.

With regard to increases in noise level, knowledge of the following relationships will be helpful in understanding the quantitative sections of this report:

1. Except in carefully controlled laboratory experiments, a change of only 1 dBA cannot be perceived.

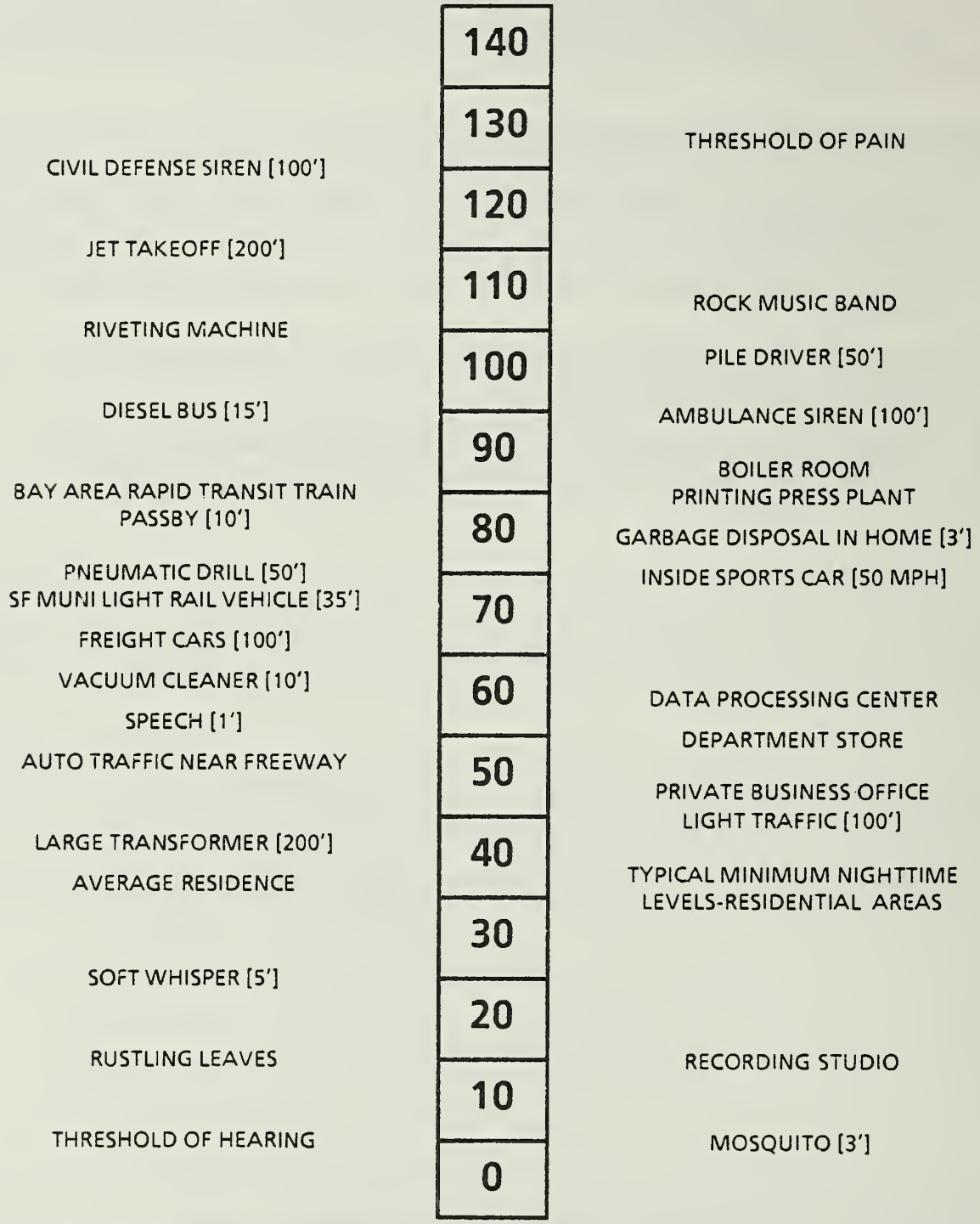
2. Outside of the laboratory, a 3-dBA change is considered a just-noticeable difference.

3. A change in level of at least 5 dBA is required before any noticeable change in community response would be expected.

4. A 10-dBA change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response.

Source: Charles M. Salter Associate, Inc., November, 1982

A-WEIGHTED SOUND PRESSURE LEVEL, IN DECIBELS



[100']-DISTANCE IN FEET BETWEEN SOURCE AND LISTENER

TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND INDUSTRY

APPENDIX E
EMPLOYMENT AND HOUSING FACTORS

Revised

TABLE E-1

PROJECTED EFFECTS OF DOWNTOWN OFFICE DEVELOPMENT ON REGIONAL HOUSING MARKETS

Housing Market	Net Project Demand in 1985 Number of Households	Gross Cumulative Demand[3] 1982 to 1990 Number of Employees	Gross Cumulative Demand[3] 1982 to 1990 Number of Households	Net[4] Housing Stock 1982-1990	Project Demand as % of Growth 1983-1990	Cumulative Demand as % of Growth 1982-1990
San Francisco[1]	103-213	11,400 to 30,400	8,100 to 16,900	12,000	0.9-1.8	68-141
North Bay[2] (Marin and Sonoma Counties)	66	6,800	5,200	36,800	0.2	14
Peninsula[2] (San Mateo and Santa Clara Counties)	96	9,900	7,600	87,600	0.1	9
East Bay[2] (Alameda and Contra Costa Counties)	281	28,900	22,200	111,800	0.3	20
TOTAL[5]	656	76,000	51,900	248,200	0.3	21

[1]The range of San Francisco employees and households is based on a report prepared by Recht Hausrath Associates, referenced as Appendix C in the 101 Montgomery Street Final EIR, EE 80.26, certified May 7, 1981 (15-30% of all employees would reside in San Francisco and 1.4 workers would occupy each household) and Office Housing Production Program (OHPP) Interim Guidelines, Department of City Planning, January 22, 1982 (40% of all employees would reside in San Francisco and 1.8 workers would occupy each household).

[2]Distribution of employees is based on the Department of City Planning's Guidelines for Environmental Review: Transportation Impacts, September 1983, page 13. The percentages have been weighted to account for OHPP Guidelines (i.e., 40% of employees reside in San Francisco) as follows: 9% in the North Bay, 13% on the Peninsula, and 38% in the East Bay. The net project household demand is based on net new office workers and an average of 1.3 workers per household, based on 1980 Census Data.

[3]Cumulative housing demand calculated from data on office projects presented in Table E-2, Appendix E, including those under construction (5,530,950 sq.ft.), approved (4,760,625 sq. ft.), or under formal review (8,721,295 sq. ft.)

[4]Net housing stock growth is based on Association of Bay Area Governments, Projections 79, January 1980. Projections contained in that document for 1980-1990 were prorated to reflect 1982-1990 net housing stock growth.

[5]The total reflects the high end of the range for San Francisco housing demand. If the low end of the range occurs in San Francisco, then the housing demand in other areas would be higher than shown in the table, since the total housing demand will remain constant regardless of the regional distribution.

Source: EIP Corporation.

TABLE E-2

HOUSING AFFORDABILITY BY HOUSEHOLD INCOME

Gross Annual Income Per Household or Per Individual	Maximum Affordable Monthly Housing[1] Expenditure	Housing Cost and Type of Unit	
		Monthly[2] Cost	Type of Unit (Price)
$ 5,000	$ 125		
8,300[3]	208		
10,000	250		
10,680	267	$ 267	Census Median Rent[6]
11,560	289	289	Studio Apartments[7]
15,000	375		
18,200	455	455	Median Rent, All Units[7]
20,000	500		
23,520	588	588	Rent, 3+ Bedroom Units[7]
25,000[4]	625		
27,300	683		
30,000	750		
35,000	875		
40,000	1,000		
40,880	1,022	1,022	Lowest House Price ($95,000)[8]
45,000	1,125	1,125	Census Median Value ($104,600)[6]
50,000	1,250		
52,560	1,314		
55,000	1,375		
65,080	1,627	1,627	Median House Price ($151,203)[8]
101,880	2,547	2,547	Highest House Price ($236,750)[8]
370,800[5]	7,500		

Footnotes on following page

TABLE E-2
(continued)

[1]The Office Housing Production Program (OHPP) Interim Guidelines, January 1982, define affordable housing as follows:

> Rental expenses not exceeding 30% of gross monthly income, adjusted for family size; and home ownership expenses not exceeding 38% of gross monthly income, adjusted for family size, including mortgage payments, property taxes, insurance, and/or homeownership association dues.
>
> For the purpose of this table, 30% of gross monthly income is used to calculate housing affordability for both renters and owners. For owners it is assumed that 8% of gross monthly income would cover property taxes, insurance, and/or homeownership association dues and other related expenses. No adjustment has been made for family size because family circumstances vary widely.

[2]Monthly housing costs refer to rents and mortgage payments for the housing prices shown in parentheses; sources of rents and house prices are as footnoted. Monthly costs of ownership housing were calculated as monthly mortgage expenses assuming 20% down payment, 30-year mortgage, and 16% interest rate, not including insurance, property taxes, and other related housing costs.

[3]U.S. Bureau of Labor Statistics, Area Wage Survey for the San Francisco-Oakland, California Metropolitan Area, March 1981. $8,300 was the mean 1980 income of inexperienced file clerks, one of the lowest-paid office occupations listed. This value has been inflated to $10,260 in 1983 dollars using the Consumer Price Index for all urban consumers in the San Francisco-Oakland Standard Metropolitan Statistical Area (SMSA).

[4]The $27,300 income figure was derived by inflating the $16,300 median income of downtown office workers from the 1974 SPUR survey through December 1981 by 67% using U.S. Bureau of Labor Statistics national wage information for nonsupervisory finance, insurance, and real estate sector employees through December 1981, and the Consumer Price Index thereafter.

[5]Montgomery-Washington Building FEIR, 81.104E, certified January 28, 1982. The median salary of wage earners at 601 Montgomery Street was estimated to be $52,560 and the highest salary for corporate officers $300,000, according to a 1981 survey.

[6]City Planning and Information Services, 1980 Census Information, March 1982. Rental data include residential hotels whose rent levels may be substantially lower than other types of rental dwellings and may therefore have an effect on the median rent.

[7]Department of City Planning, Rent Survey, 1980. These data are based on a small nonrandom sample of newspaper ads and may not reflect true rental costs.

[8]San Francisco Board of Realtors, Multiple Sales Service, October 5, 1981. (Annual data on housing sales prices including all homes sold from February 11, 1981 to October 1, 1981.)

NOTE: The age of the 1974 SPUR study referenced in Footnote 4 above and the small sample size of the 601 Montgomery Street survey referenced in Footnote 5 limit the statistical accuracy of the data when applied to individual proposed office projects. These two sources constitute the only salary information available for downtown San Francisco employees.

APPENDIX F

AIR QUALITY

SAN FRANCISCO AIR POLLUTANT SUMMARY 1979-1983[1]

Pollutant	Federal Standard[2]	State Standard[3]	1979	1980	1981	1982	1983
Carbon Monoxide (CO)							
1-hour average (ppm)	35	20					
Highest hourly average			20	10	8	--	--
No. of exceedances			0	0	0	0	0
8-hour average (ppm)	9	9					
Highest 8-hour average			13.8	7.5	5.3	9	5.1
No. of exceedances			1	0	0	1	0
Ozone (0_3)							
1-hour average (ppm)	.12[4]	.10					
Highest hourly average			0.08	0.09	0.07	.08	.13
No. of exceedances			0	0	0	0	1
Nitrogen Dioxide (NO_2)							
1-hour average (ppm)	None	.25					
Highest hourly average			0.16	0.17	0.11	.13	.13
No. of exceedances			4	0	0	0	0
Sulphur Dioxide ($S0_2$)							
24-hour average (ppm)	.14	.05					
Highest 24-hour average			0.034	0.018	0.016	.012	.018
No. of exceedances			0	0	0	0	0
Total Suspended Particulate (TSP)							
24-hour average (ug/m^3)	260	100					
Highest 24-hour average			117	173	103	106	117
No. of exceedances			1	6	1	3	4

SAN FRANCISCO AIR POLLUTANT SUMMARY 1979-1983[1]

Pollutant	Federal Standard[2]	State Standard[3]	1979	1980	1981	1982	1983
Annual Geometric Mean (ug/m^3)[5]	75	60					
Annual Geometric Mean			42.0	52.1	56.0	57.0	55.0
Annual Exceedances			No	No	No	No	No
Lead							
3-month Average (mg/m^3)	1.5	None					
Highest 3-month average			0.95	0.53	0.35	---	---
No. of exceedances			0	0	0	---	---
1-month Average (mg/m^3)	None	1.5	—	—	—	—	—
No. of exceedances	---	—	—	—	—	—	—

[1]1979 data collected at 939 Ellis Street. 1980-81 data collected at 900 23rd Street.

[2]Federal standard is not to be exceeded more than once per year. Annual average standards are not be exceeded.

[3]State standards are not to be equalled or exceeded. The State 1-hour average CO standard was reduced from 40 ppm to 20 ppm in 1982.

[4]The federal standard is given in terms of Expected Annual Excesses which is based on a 3-year running average.

[5]The annual Geometric Mean is a single number which applies to an entire year of data. "No" indicates TSP concentrations did not exceed 60 (ug/m^3).

Note: ppm = parts per million
ug/mg^3 = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter

Source: BAAMQD, Air Pollution in the Bay Area by Station and Contaminant, March issues, 1980-1984; and California Air Resources Board, California Air Quality Data, Annual Summaries, 1979-1982.

APPENDIX G

MICROCLIMATE IMPACT STUDY

299 SECOND STREET PROJECT

I. SUMMARY

Wind tunnel tests were conducted for northwest, west and southwest winds on the project site in its current condition and with the proposed project in place. The wind in San Francisco blows from these directions over 97% of the time during the summer.

Wind tunnel measurements were used to predict mean windspeeds near the proposed project site. These mean windspeeds were compared to a comfort criterion, based upon the onset of uncomfortable physical effects of the wind, and a hazard criterion, based upon winds that can be potentially hazardous to elderly pedestrians.

In considering the wind tunnel results, the frequency of each wind direction is an important consideration. West winds occur about 73% of the time during the five-month summer season, or about 100 days. Southwest winds occur about 13.5% of the time, or 20 days of the 150-day summer.

Existing windspeeds near the site were found to range from 1.8 to 7.3 mph, below the comfort and hazard criteria.

The project was found to increase winds along sidewalk areas adjacent to the site. The maximum increase was 2.9 mph. Because existing winds are well below the comfort criterion, winds with the project would remain below both the comfort and hazard criteria. Winds within the outdoor eating area were found to be between 2.3 and 6.6 mph, depending on wind direction.

II. INTRODUCTION

Architects, engineers and city planners designing urban structures are limited by the lack of information on wind effects caused by buildings. Potential effects include pedestrian discomfort and wind-caused mechanical problems with doors, windows, and ventilating systems. Once a structure is built, remedial measures (if they exist at all) usually are expensive.

It is virtually impossible to anticipate, by analysis or intuition, the winds that will be caused by a structure, as they are determined by complex interactions of forces. Fortunately it is possible to predict the wind patterns and pressures around structures by testing scale models in a wind tunnel which can simulate natural winds near the ground. This allows the designer to foresee possible environmental and mechanical problems and alleviate them before the building is erected.

Data from wind tunnel tests can be combined with climatological data to analyze the effect of a proposed structure on pedestrians' comfort. The frequency distribution of wind strengths at pedestrian levels, combined with temperature data and shadow patterns of the proposed structure and its surroundings, can be used to forecast comfort at pedestrian levels.

III. BUILDING AND SITE DESCRIPTION

The project site is on the southwest end of the block bounded by Second, Folsom, Clementina and First Streets in downtown San Francisco. The project area contains both older buildings of two to four stories and newer highrises exceeding 20 stories.

The project would consist of a 16-story building covering the entire site. The design would be relatively complex, incorporating setbacks and a tapered roofline into the design. A greenhouse and outdoor seating area would be located along the Folsom Street frontage. A greenhouse area would be located above the truck loading dock off of Clementina Street.

IV. MODEL AND WIND TUNNEL FACILITIES

A. Model

A scale model of the proposed project and the structures surrounding the area for a distance of several blocks was constructed at a scale of 1 inch equals 30 feet.

B. Wind Tunnel Facilities

The Environmental Impact Planning Corporation boundary layer wind tunnel was designed specifically for testing architectural models. The working section is 7 feet wide, 43 feet long, and 5 feet high. Wind velocities in the tunnel can be varied from 3.5 mph to 13 mph. The flow characteristics around sharp-edged objects, such as architectural models, are constant over the entire speed range. Low speeds are used for tracer smoke, high speeds for windspeed measurements.

Natural wind characteristics are simulated by arranging turbulence generators and roughness upwind of the test section. These allow adjustments in wind characteristics to provide for different scale models and varying terrain upwind of the project site.

Measurements of windspeed around the model are made with a hotwire anemometer, a device that relates the cooling effect of the wind on a heated wire to the actual windspeed. The flow above the City is measured by a Pitot tube connected to a micromanometer. The Pitot tube and micromanometer directly measure the pressure difference between moving and still air. This pressure difference is then related to the actual windspeed. Flow visualization is achieved by use of floodlit smoke.

V. TESTING METHODOLOGY

A. Simulation of Flow

The most important factors in ensuring similarity between flow around a model in a wind tunnel and flow around the actual building are the structure of the approach flow and the geometric similarity between the model and the prototype. A theoretical discussion of the exact criteria for similarity is not included in this paper, but may be found elsewhere (Cermak, 1966, or Cermak and Arya, 1970).

The variation of windspeed with height (wind profile) was adjusted for the scale of the model and the type of terrain upwind of the site. The profiles used were those generally accepted as adequately describing the flow over that type of terrain (Lloyd, 1967).

B. Testing Procedure

The windflow characteristics of the site in its current state were investigated to ascertain the present wind environment. Windspeeds and wind directions at specified points throughout the site were measured and recorded. Wind direction was measured by releasing smoke at each point and recording the direction in which the smoke traveled. Windspeed measurements were made at the same points, at a scale height of 5 feet above the ground. A hotwire anemometer probe is required to make these measurements within a fraction of an inch of the model surfaces. The probe is repeatedly calibrated against the absolute reading of a Pitot tube and micromanometer. Velocity readings close to the model are generally accurate to within 10% of the true velocity.

Measurements for the building are made by keeping the probe in place while replacing the existing buildings with each proposal under consideration.

Before and after each test run, a calibration measurement was made above the model. The purpose of these measurements was to relate the wind tunnel measurements to actual wind records from the Bay Area Air Quality Management District's wind instrumentation located west of the site at 939 Ellis Street.

C. Data Analysis

The results of wind tunnel tests are measured windspeeds at selected locations on the scale model. To make these data applicable to the real world and comparable to data from other tunnels or other tests at different scales it must be expressed in terms of a calibration speed. This calibration speed is normally taken as the free-stream velocity above the model (above the "boundary layer" formed by surface friction).

The calibration speed can be used within an assumed wind profile (variation with height) to relate measured wind tunnel data with statistics at a nearby meteorological station. The BAAQMD office, located about 10 miles northwest of the site, is an ideal choice. Wind tunnel measurements have therefore been expressed as the mean windspeed expected at the point of interest, based on weather records from 939 Ellis Street.

VI. IMPACT CRITERIA

The primary impact of wind in the San Francisco area is human discomfort, and in extreme cases, human safety. Theoretical and empirical attempts to determine human comfort criteria in a cool climate such as the City's have not yielded a simple criterion.

Obviously, variables such as temperature, clothing levels, levels of activity and insulation have to be considered. In the absence of usable thermal comfort criterion, a criterion based on physical effect is often used. Physical effects that cause pedestrian discomfort are windblown dust, the blowing of hair and flapping of clothes, and interference with contact lenses. These physical effects all begin to occur at a windspeed of 11 mph.

Windspeeds of 35 mph can conceivably unbalance an elderly pedestrian, and represent a hazardous condition. Winds this strong are seldom measured in San Francisco, but high-rise buildings can accelerate winds in localized areas well above the ambient windspeed.

In this report, measured data have been expressed as the mean windspeed. Thus, a plotted value of 5.0 means that the mean wind at that location is expected to be 5 mph when the wind is blowing from the direction in question.

Wind direction and speed frequencies have been analyzed by the BAAQMD for 1977-1978 data. The District considers San Francisco to have three climatic regimes: summer (May through September), winter (November through March) and a transition regime (April and October). In terms of wind-caused comfort problems, the five-month "summer" regime is of greatest importance. The mean windspeed in the "summer" regime is 8.0 mph, in the "winter" regime it is 4.8 mph and during "transition" months it is 6.0 mph. It is during the summer that the cool temperatures, wind and clouds that San Francisco's climate is noted for are most frequent. For this reason, the statistical wind data for the five-month "summer" regime are used to define criteria.

Summer afternoons are the windiest times in San Francisco, so wind statistics for 4:00 p.m. in summer have been used to develop a comfort criterion. Analysis of average by hour of day shows that the average windspeed in San Francisco varies little from noon to 6:00 p.m. Thus, criteria based on a 4:00 p.m. wind statistic should be valid for the entire afternoon.

A mean windspeed of 11 mph has been selected as the comfort criterion. A criterion for pedestrian hazard is not as straightforward. The extreme wind conditions that would result in 35 mph winds are infrequent. A statistical criterion of a frequency of 35 mph winds less than 5% of the time was selected. Because the distribution of windspeed varies wind direction, the mean windspeed corresponding to a 5% frequency of winds greater than 35 mph is different for each wind direction. The hazard criteria are shown below.

Wind Direction	Hazard Criterion
Northwest	24.2 mph
West	26.2 mph
Southwest	26.9 mph

In summary, the hazard criteria define the mean windspeed that, if exceeded, would result in winds greater than 35 mph on more than 5% of the summer afternoons.

VII. TEST RESULTS AND DISCUSSION

Tests were conducted for northwest, west and southwest winds. Winds come from these directions 97% of the time in San Francisco during the summer, and tend to be the strongest.

Wind tunnel results are shown in Figures G-1 through G-3. Three types of data are shown. The circles indicate measurement locations. Wind direction is indicated by a "vane." The existing and future mean windspeed expressed in miles per hour is plotted. The degree of change in windspeed ratio caused by the project is symbolized within the circle. Shaded areas shown where the comfort or hazard criteria are exceeded.

In considering the wind tunnel results, the frequency of each wind direction is important. West winds occur about 73% of the time during the 5-month summer season, or about 110 days. Southwest winds occur about 13.5% of the time or 20 days of the 150-day summer. Northwest winds occur about 10.5% of the time or 16 days in the 150-day summer.

A. Northwest Winds

The wind tunnel results for the project are shown in Figure G-1. The proposed project would increase winds along Clementina Street adjacent to the project and the east side of Second Street adjacent to the project. The maximum increase along Clementina Street would be 2.8 mph; along Folsom it would be 1.9 mph. Elsewhere, the project would either have no effect or decrease winds. The maximum windspeed near the project would be 7.5 mph, below both the comfort and hazard criteria. Windspeed within the outdoor eating area would be 2.3 mph.

B. West Winds

Wind tunnel results for west winds are shown in Figure G-2. The project would increase winds along Clementina Street, and have either no effect or reduce winds elsewhere. Windspeed increases along Clementina Street would be a maximum of 2.9 mph. The highest windspeed near the project would be 7.3 mph, below both the comfort and safety criteria. The windspeed within the outdoor eating area would be 4.7 mph.

C. Southwest Winds

Wind tunnel results for southwest winds are shown in Figure G-3. The project would generally increase winds along sidewalk areas adjacent the site. Increases would range up to 2.8 mph. The maximum windspeed near the site would be 7.3 mph, below both the comfort and safety criteria. Windspeed within the outdoor eating area would be 6.6 mph.

VIII. MITIGATION

The current design utilizes multiple setbacks and a tapered design, two design features known to generally reduce ground-level wind acceleration.

Within the outdoor eating area, winds are predicted to range from 2.3 to 6.6 mph depending on the wind direction. Because outdoor eating is particularly sensitive to wind, some additional wind protection in the form of screens, plantings, etc. is advisable to keep winds below 5 mph.

NORTHWEST WINDS

FIGURE G-1

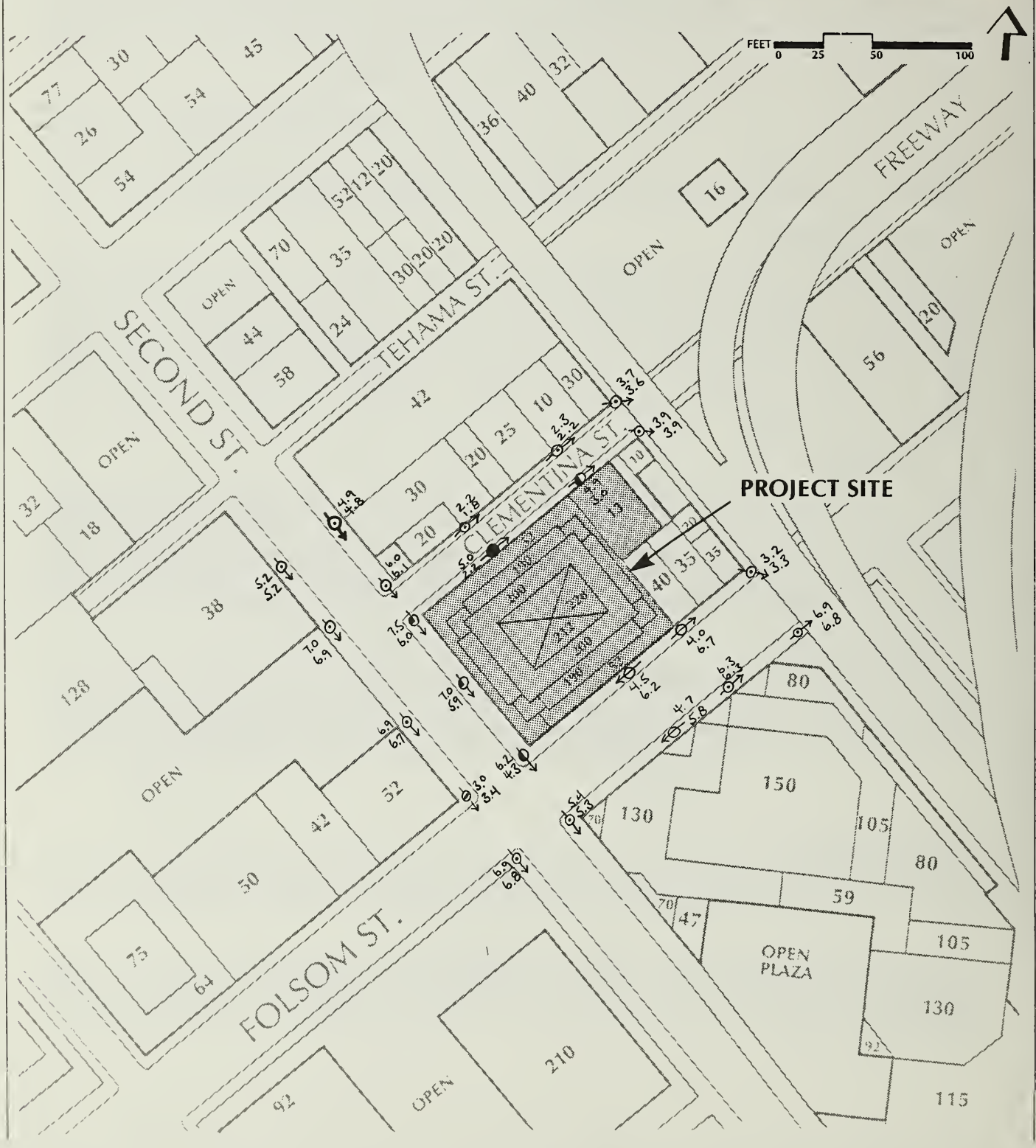
- ○ CHANGE IN WINDSPEED RATIO NOT MEASURABLE
- ⊙ CHANGE OF LESS THAN ±10%
- ⊖ REDUCTION OF GREATER THAN 10%
- ◔ INCREASE OF 10-24%
- ◐ INCREASE OF 25-49%
- ◕ INCREASE OF 50-99%
- ● INCREASE OF OVER 100%

COMFORT CRITERION: 11 MPH
HAZARD CRITERION: 35 MPH

WIND DIRECTION INDICATOR
WINDSPEED
WITH/PROJECT 3.9
W/OUT PROJECT 3.0

WINDSPEEDS ARE MEASURED WIND TUNNEL DATA BASED ON A REFERENCE SPEED. WIND AT BAY AREA QUALITY MANAGEMENT DISTRICT'S OFFICES AT 939 ELLIS ST. IS USED AS THE REFERENCE. A PLOTTED VALUE OF 5.0 INDICATES AVERAGE WIND SPEED AT THAT POINT IS 5.0 MPH.

SOURCE: EIP CORPORATION



WEST WINDS

FIGURE G-2

- ○ CHANGE IN WINDSPEED RATIO NOT MEASURABLE
- ⊙ CHANGE OF LESS THAN ±10%
- ⊖ REDUCTION OF GREATER THAN 10%
- ◔ INCREASE OF 10-24%
- ◐ INCREASE OF 25-49%
- ◕ INCREASE OF 50-99%
- ● INCREASE OF OVER 100%

WIND DIRECTION INDICATOR

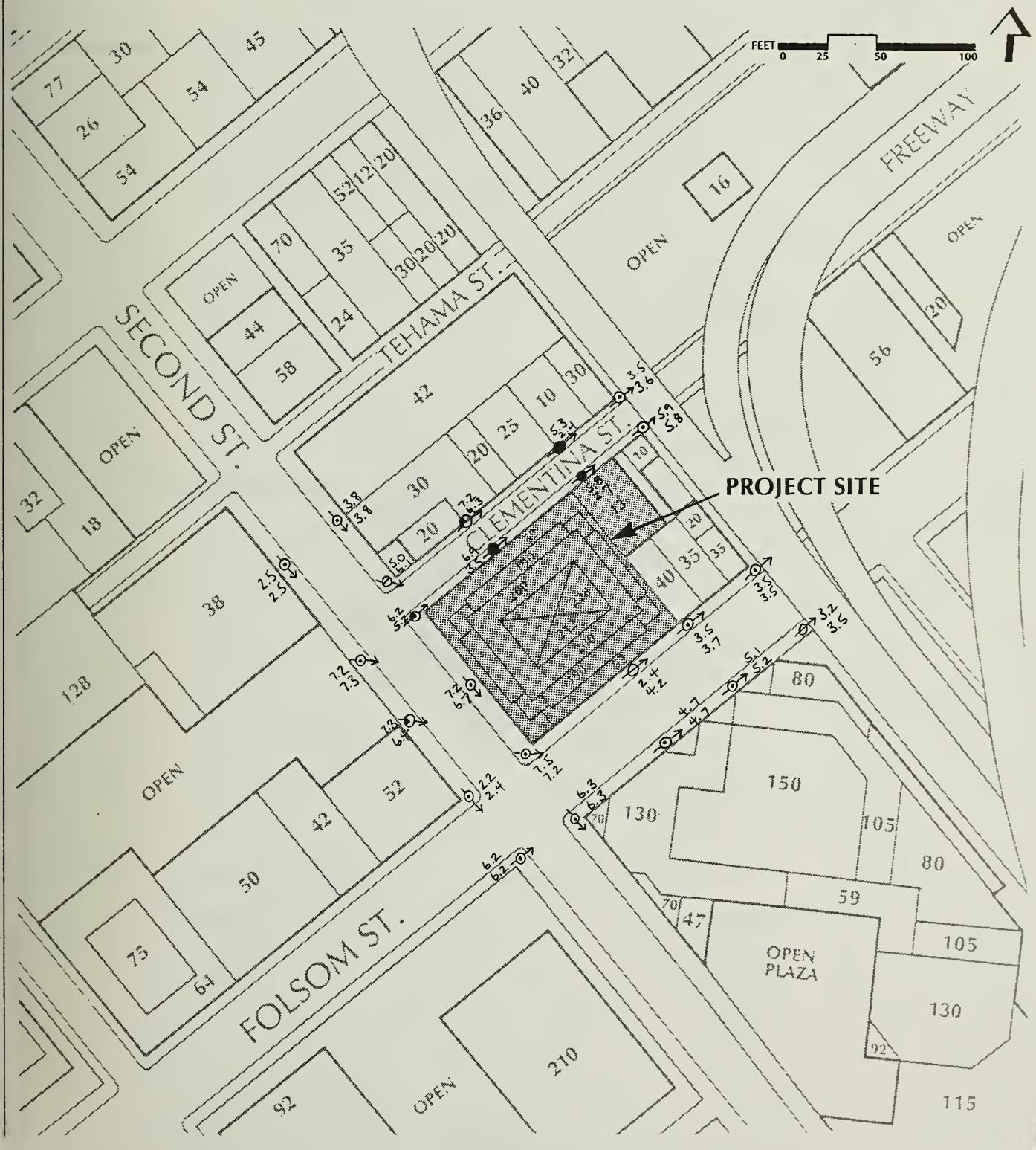
WINDSPEED

WITH/PROJECT 3.9
W/OUT PROJECT 3.0

COMFORT CRITERION: 11 MPH
HAZARD CRITERION: 35 MPH

WINDSPEEDS ARE MEASURED WIND TUNNEL DATA BASED ON A REFERENCE SPEED. WIND AT BAY AREA QUALITY MANAGEMENT DISTRICT'S OFFICES AT 939 ELLIS ST. IS USED AS THE REFERENCE. A PLOTTED VALUE OF 5.0 INDICATES AVERAGE WIND SPEED AT THAT POINT IS 5.0 MPH.

SOURCE: EIP CORPORATION



SOUTHWEST WINDS

FIGURE G-3

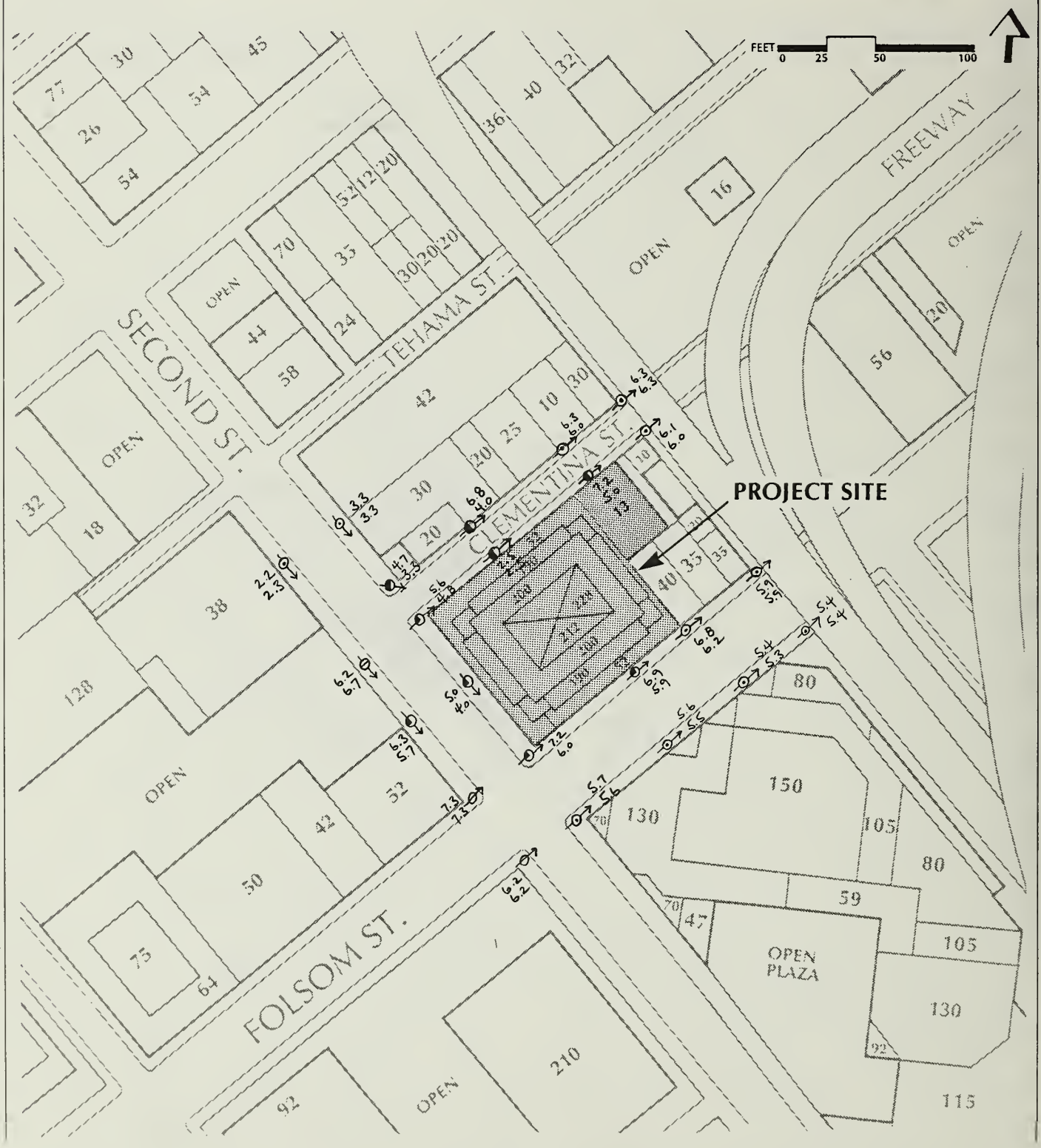
- ○ CHANGE IN WINDSPEED RATIO NOT MEASURABLE
- ⊙ CHANGE OF LESS THAN ±10%
- ⊖ REDUCTION OF GREATER THAN 10%
- ◴ INCREASE OF 10-24%
- ◐ INCREASE OF 25-49%
- ◕ INCREASE OF 50-99%
- ● INCREASE OF OVER 100%

COMFORT CRITERION: 11 MPH
HAZARD CRITERION: 35 MPH

WIND DIRECTION INDICATOR
WINDSPEED
WITH/PROJECT 3.9
W/OUT PROJECT 3.0

WINDSPEEDS ARE MEASURED WIND TUNNEL DATA BASED ON A REFERENCE SPEED. WIND AT BAY AREA QUALITY MANAGEMENT DISTRICT'S OFFICES AT 939 ELLIS ST. IS USED AS THE REFERENCE. A PLOTTED VALUE OF 5.0 INDICATES AVERAGE WIND SPEED AT THAT POINT IS 5.0 MPH.

SOURCE: EIP CORPORATION



APPENDIX H

RATED BUILDINGS DEMOLISHED IN THE C-3 DISTRICT, 1979 THROUGH OCTOBER 1982

BUILDINGS TOTALLY DEMOLISHED:

Block/Lot	Name	Address	Heritage /DCP Rating
237/15	White & Co. Building	280 Battery Street	B/-
289/4	Holbrook Building	585 Sutter Street	B/3
329/2	Sommer & Kaufmann Building	828 Market Street	A/3
3709/4	Yawman-Erbe Building	50 Fremont Street	B/-
329/2A	Hart, Schaffner & Marx Building	840 Market Street	B/-
3709/7	—	400-418 Mission Street	C/-
3709/10	Golden Gate Building	51-63 First Street	C/-
292/6	Thomson & Orman Building	110-116 Kearny Street	C/-
292/8	White Building	120-130 Kearny Street	B/-
292/4	Foxcroft Building	68-82 Post Street	B/-
237/16	—	353 Sacramento Street	B/-
288/5	—	109-123 Montgomery St.	C/-
288/4	Wilson Building	125-129 Montgomery St.	C/-
288/3	—	133-137 Montgomery St.	C/-
288/2	Steil Building	141 Montgomery Street	B/-
263/2	Oceanic Building	Two Pine Street	B/-
263/4	Kirkham Building	64-70 Pine Street	C/-
263/5	—	124 Front Street	C/-
263/6	—	136 Front Street	C/-
263/7	Isuan Building	140 Front Street	C/-
263/8	Commercial Building	146-150 Front Street	C/-
313/14	City of Paris	199 Geary Blvd.	A/-
313/15	Whitney Building	133-153 Geary Blvd.	B/-
295/7	Fitzhugh Building	364-384 Post Street	A/-
3712/25	Young Building	101-105 Market Street	B/-
3712/-	Lincoln Hotel	115-121 Market Street	C/-
3712/-	—	125-131 Market Street	C/-
3712/-	—	9-23 Main Street	C/-

BUILDINGS TOTALLY DEMOLISHED: (cont'd)

Block/Lot	Name	Address	Heritage /DCP Rating
269/2	--	334 Bush Street	C/-
269/2A	--	344 Bush Street	C/-
3703/66	Forest Building	1053-1055 Market St.	C/-
223/32	Powell Cinema	35-41 Powell Street	C/-
208/2	--	643 Montgomery Street	C/-
3724/14	--	820 Howard Street	-/3

BUILDINGS PARTIALLY DEMOLISHED:

289/31	Anglo & London Paris Bank	One Sansome Street	A/5
239/12	A. Borel & Co. Building	440 Montgomery Street	A/-
239/14	Italian American Bank	460 Montgomery Street	A/-

SOURCE: Landmarks Preservation Advisory Board and Roger Owen Boyer & Associates